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UNITED STATES DISTRICT COURT

NORTHERN DISTRICT OF OHIO

EASTERN DIVISION

- -

IRON WORKERS LOCAL UNION NO. 17 INSURANCE FUND AND ITS TRUSTEES; et al.,

Plaintiffs,

vs.

PHILIP MORRIS, INCORPORATED, et al.,

Defendants.

Case No.: 1:97 CV 1422

JUDGE JAMES S. GWIN

xxx

- -

DEPOSITION OF BRIAN P. McCALL, Ph.D.

Volume I, Pages 1 - 269

(The following is the deposition of BRIAN P. McCALL, Ph.D., taken pursuant to notice, at the offices of Robins, Kaplan, Miller & Ciresi, 2800 LaSalle Plaza, 800 LaSalle Avenue, Minneapolis, Minnesota, commencing at approximately 9:06 o'clock a.m., January 29, 1999.)

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3	Smoking-Attributable Health Care Costs: Iron Workers Local No. 17 Insurance Fund et al. v. Philip Morris, Inc. et al.; Supplemental Expert Report of Brian P. McCall, Ph.D., Nov. 18, 1998; 8 pages	6
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(or as otherwise identified in transcript)

*(REPORTER'S NOTE: * symbolizes an exhibit number which was reserved, having been identified in the transcript at the page indicated, to be later marked and incorporated into the transcript, per agreement of counsel, but not included as part of the proceedings at the time of this deposition.)

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00:00:00 P R O C E E D I N G S

00:00:00 (McCall Deposition Exhibits 1 through 4 marked for identification prior to commencement of deposition.)

00:00:00 (Witness sworn.)

BRIAN P. McCALL, Ph.D.,

having been called as a witness and having been first duly sworn, testified under oath as follows:

00:00:12 EXAMINATION

BY MR. WITHEY:

00:00:14 Q. Can you state your name and give your business address for the record, sir?

00:00:22 A. Brian Patrick McCall, and my address is 3-251 Carlson School of Management, 321 19 Avenue South, Minneapolis, Minnesota, 55455.

00:00:40 Q. Are you a professor at the business school over there?

00:00:42 A. Yes, I am.

00:00:44 Q. Do you want me to call you Doctor or Professor this morning?

00:00:46 A. Doctor is fine.

00:00:48 Q. And I have some questions for you this morning and this afternoon, and if you don't understand any question and you feel it's too vague or unclear to -- to answer, would you mind asking me to rephrase the

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00:01:00 question.
00:01:00 A. Yes.
00:01:00 Q. You would mind?
00:01:04 A. No. Yes, I will ask to replace.
00:01:04 Q. Thank you.
00:01:06 So I assume if you answer you feel it's clear
00:01:10 and intelligent enough to answer; fair enough?
00:01:12 A. Right.
00:01:16 Q. The court reporter is taking down everything we
00:01:20 say and you're under oath and you know that this can
00:01:22 be used at the time of trial in the event you
00:01:22 testify?
00:01:22 A. Yes.
00:01:26 Q. And therefore it's important to be as truthful
00:01:26 and accurate as you can?
00:01:26 A. Yes.
00:01:30 Q. And I assume you've given depositions before; is
00:01:30 that a fair enough statement?
00:01:30 A. Yes.
00:01:34 Q. And how many depositions, if you can recall,
00:01:38 have you given in cases where the tobacco industry or
00:01:44 their law firms have hired you?
00:01:48 A. Two in Minnesota, the AG case; one in the
00:01:58 Washington AG case, and one in the Northwest Laborers
00:02:00 Trust Case. I think that's it.

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00:02:02 Q. Okay.

00:02:06 A. And I testified in the Minnesota case at trial.

00:02:12 Q. Okay. Were you retained in the Oklahoma Attorney General's litigation by anybody for the tobacco industry?

00:02:18 A. No.

00:02:26 Q. What documents have you read in preparation for your deposition today, if any?

00:02:34 A. Well I've read through my reports. I think I reviewed again some of the Plaintiff reports, and I reviewed briefly some papers I read in the past.

00:02:44 Q. Which papers were those?

00:02:52 A. Some of the ones that have to do with estimating lifetime medical costs of smoking.

00:03:00 Q. Those were articles cited in your -- in your bibliography?

00:03:04 A. Right, most of them were cited in my -- either my report or I think a document list that I have given.

00:03:08 Q. Well were there any that you read that weren't cited, that you hadn't cited before?

00:03:14 A. Not that I can recall that -- you know, with regard to the preparation.

00:03:22 Q. Well, were there -- have you had conversations with defense counsel in preparation for your

00:03:30

00:03:32

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00:03:34 deposition today?
00:03:34 A. Yes.
00:03:38 Q. And who was that? Who did you talk to?
00:03:42 A. Bob McCarter, at Arnold & Porter.
00:03:42 Q. All right. Anybody else?
00:03:50 A. I may have briefly spoke to Peter Biersteker,
00:03:52 but it was very brief.
00:03:54 Q. And did you have a discussion with Mr.
00:03:56 Biersteker --
00:03:58 He's a defense lawyer in this case; correct?
00:04:00 A. Right.
00:04:02 Q. Did you talk to him about the status of any
00:04:06 multiple imputation analysis being done by either
00:04:10 Professor Rubin or Professor Schaffer at Penn State?
00:04:12 A. The only thing I recall was that he had
00:04:16 mentioned that they -- they were working on it, but
00:04:18 that's about all I know.
00:04:18 Q. Working on what?
00:04:24 A. Doing some multiple imputation. I haven't -- I
00:04:26 didn't talk about any specifics, other than that
00:04:36 there was other experts working on multiply imputing
00:04:40 the NMES data, National Medical Expenditures.
00:04:44 Q. And you said that that -- they would be -- that
00:04:46 would be provided to you?
00:04:48 A. He said it may, yeah. He didn't say when.

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00:04:52 Q. Well did -- when did you talk to Mr. Biersteker?
00:04:56 A. About that? I think I -- I don't know if I
00:05:00 talked directly to him, but I think there was some
00:05:02 mention made yesterday.
00:05:04 Q. And who did you talk to yesterday about that
topic?
00:05:10 A. Well it's hard because I may have talked --
00:05:14 Well, I think, yeah, it was just Biersteker either
00:05:16 directly or indirectly through Bob McCarter.
00:05:20 Q. How do you talk to someone indirectly?
00:05:24 A. Well, you know, he's on the phone with him.
00:05:26 Q. He's on the phone with them and he --
00:05:28 A. I just ask him something, he asks him and --
00:05:32 Q. You weren't on the same line with Biersteker?
00:05:36 A. Well I don't have a -- in my office I don't have
00:05:38 a speaker phone or anything like that.
00:05:44 Q. Were you in person with Mr. McCarter --
00:05:48 McCarter, is that his name?
00:05:48 A. Yeah.
00:05:52 Q. And so as I understand, McCarter then called
00:05:54 Biersteker?
00:05:56 A. They were talking, yeah, on the phone and there
00:06:00 was some mention made of multiply-imputed data.
00:06:02 Q. This is on the phone in your office?
00:06:04 A. Right.

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00:06:08 Q. So you were present with Mr. McCarter yesterday?
00:06:08 A. Yes.
00:06:10 Q. How long were you with him?
00:06:14 A. Well, the afternoon. I don't know.
00:06:16 Q. The whole afternoon?
00:06:20 A. Not the whole -- well, four hours but --
00:06:22 Q. What did you do for this four hours?
00:06:26 A. We prepared, and we went to lunch.
00:06:28 Q. Did he -- did he tell you what questions you
00:06:32 might want to -- you could expect to hear from me?
00:06:38 A. We talked briefly about, yeah, what potentially
00:06:42 might be asked.
00:06:42 Q. What did he tell you?
00:06:52 A. We talked about, you know, the parts of my
00:06:54 report that you might focus on.
00:06:56 Q. Which ones were they?
00:07:00 A. Well in general just sort of the first report,
00:07:06 which had to do with outlining the lifetime approach
00:07:16 to estimating costs. You know, we sort of talked
00:07:22 about the supplemental where I review some lifetime
00:07:26 studies, and specifically kind of how I calculated
00:07:32 some of that, the estimates of the relative risk from
00:07:42 a lifetime point of view. Talked briefly about the
00:08:00 NMES data. We talked briefly -- I'm trying to
00:08:04 remember what else. We talked briefly about the

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00:08:10 Second Supplemental Report that focused on sort of
00:08:16 how Harris estimated conduct-related damages and what
00:08:24 I did and how I did it. So we basically went through
00:08:28 my reports and spent some of the time explaining how
00:08:42 I got certain results so I was clear on that. And I
00:08:46 think I made mention I had had a couple typos in one
00:08:50 of my tables, so I told him I was bringing a Table of
Revision.
00:08:54 MR. McCARTER: Did you -- did you bring
00:08:54 that with you?
00:08:58 THE WITNESS: Yeah.
00:09:08 A. In the second supplemental table -- this is it
00:09:16 -- yeah, Table number 4.
00:09:24 Q. Anything else you -- you and Mr. McCarter had a
00:09:26 discussion about -- about what questions I might ask
00:09:28 or areas I might cover in my questioning?
00:09:36 A. No. I think we talked briefly about the
00:09:46 lifetime estimation methods, NMES, and then I think
00:09:48 there were some parts of my reports where Mr.
00:09:52 McCarter wanted to know the specifics of how I got
00:09:56 certain results, and so we talked -- talked about
00:10:04 that. And then --
00:10:04 Q. Anything else?
00:10:14 A. No. Mr. McCarter was on the phone with Mr.
00:10:20 Biersteker for some time too during that period.

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00:10:22 Q. What'd they talk about?
00:10:22 A. I wasn't listening. I don't know.
00:10:24 Q. Well at least at some point in time there was
00:10:26 some reference to the multiple imputation and NMES
00:10:26 data; correct?
00:10:26 A. Right.
00:10:28 Q. And did you understand that -- did you have an
00:10:28 understanding that -- Strike that.
00:10:30 When did you first have an understanding that
00:10:34 there might be some additional work or analysis of
00:10:38 the NMES -- that's N-M-E-S, capital letters -- data?
00:10:46 A. It was before yesterday. It was maybe -- I'm
00:10:50 trying to remember -- at least a couple weeks ago,
00:10:52 maybe even more, but it was -- it was before
00:10:56 yesterday that there was some mention made of
00:11:00 multiple imputation of the NMES.
00:11:06 Q. Well you put it in your first report?
00:11:10 A. Right, so it was certainly before -- well, Mr.
00:11:12 Biersteker may have mentioned it once a while ago and
00:11:16 then it sort of dropped and I didn't know what was
00:11:20 going on and then he brought it up again two or three
00:11:20 weeks ago.
00:11:22 Q. No, but I'm asking the first time?
00:11:26 A. Yeah, the first time might have been, you know,
00:11:28 a month or two ago, somewhere in that neighborhood.

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00:11:30 I don't remember exactly.

00:11:32 Q. And what were you told was going to be done?

00:11:36 A. I just was told that there might be some attempt

00:11:40 -- yeah, it was probably two months ago, that there

00:11:44 was going to be an attempt to try to multiply impute

00:11:48 the NMES, and then I didn't hear anything further for

00:11:52 -- there was a big gap of time, I can't remember

00:11:54 exactly, a month or so, and then I heard mention of

00:11:56 it again.

00:11:58 Q. Well did you understand why they were going to

00:12:00 do it, somebody was going to do it?

00:12:06 A. My understanding was for sensitivity tests.

00:12:08 Q. Well did you understand that Professor Rubin

00:12:14 felt that the NMES -- missing data problem with NMES

00:12:18 could only be solved by doing some sort of multiple

00:12:22 imputation analysis, that -- that he believed that,

00:12:24 you know, there was a problem with -- with the data

00:12:28 unless there was some legitimate, reliable, and valid

00:12:32 attempt to account for the missing data and that what

00:12:34 had been done up until that time was not adequate?

00:12:36 MR. McCARTER: Objection; mischaracterizes

00:12:40 Rubin's testimony, and compound. You can answer.

00:12:44 A. I was aware that -- you know, I think even in

00:12:46 the Minnesota trial that Professor Rubin had made

00:12:50 mention that he thought that multiple -- multiple

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00:12:54 imputation of NMES would be a better way to handle
00:12:56 the missing data problem.
00:12:58 Q. Well then I take it you were aware as early as
00:13:04 the time that you and Rubin testified in Minnesota,
00:13:08 which would have been over a year ago; right? Well,
00:13:08 I don't know.
00:13:10 A. May I think of --
00:13:10 Q. 98?
00:13:12 A. Yeah.
00:13:12 Q. Okay. So nine months ago?
00:13:14 A. Right.
00:13:18 Q. You were aware then that Rubin had -- felt that
00:13:22 there ought to be a multiple imputation analysis done
00:13:22 of the NMES data; correct?
00:13:24 MR. McCARTER: Objection.
00:13:26 A. Well I don't know if he, you know, felt it
00:13:30 should be done. All I remember -- I mean I don't
00:13:34 remember exactly his testimony, I was sort of worried
00:13:36 about my own at the time, but I remember him
00:13:40 mentioning that one problem with the -- you know, the
00:13:46 way that they handled missing data in the NMES was
00:13:48 that it wasn't multiply imputed and that he thought
00:13:50 that -- that that would be a better route.
00:13:52 Q. Did you rely in your testimony in the Minnesota
00:13:54 trial on the NMES data?

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00:14:00 A. Well, I -- I mean the Plaintiffs' experts used
00:14:04 the NMES data, and essentially most of my testimony
00:14:10 in the -- in the actual trial was just sort of
00:14:16 commenting both on their findings with their model
00:14:18 and then sort of doing sensitivity checks of the
00:14:20 validity of their model.
00:14:24 Q. Right. In other words, you didn't at that time
00:14:28 put -- testify that you had utilized NMES in your own
00:14:32 analysis apart from the Plaintiffs' experts and had
00:14:38 come up with some data, numbers, values, that you
00:14:42 believed were a little more accurate based upon NMES,
00:14:44 you did not do that in Minnesota; is that correct?
00:14:46 MR. McCARTER: Objection, vague.
00:14:48 A. No, again in --
00:14:48 Are you --
00:14:52 MR. McCARTER: No, go ahead. I'm sorry.
00:14:56 A. You -- I mean what I did there in the -- the
00:15:00 testimony and in my reports was I did do some
00:15:04 estimates using NMES, but again these were sort of
00:15:08 sensitivity checks on -- on the Plaintiffs'
00:15:10 assumptions and -- and kind of --
00:15:12 Q. Right.
00:15:14 A. -- going at the validity of their model, so I
00:15:18 did do other calculations with NMES estimating
00:15:20 different types of models, but mainly as a sort of

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00:15:24 sensitivity check of their analysis to try to see how
00:15:26 their model was generating their results, but I
00:15:30 didn't claim that the estimates I did was some sort
00:15:34 of, you know, best estimate of, you know,
00:15:38 smoking-attributable damages or something like that.
00:15:44 Q. Okay. So -- but that -- it was at that trial
00:15:48 that you understood Professor Rubin testified that
00:15:52 multiple imputation of the missing data was justified
00:15:54 at least?
00:15:56 A. Yeah, I think --
00:15:58 MR. McCARTER: Objection. I'm sorry.
00:15:58 Objection.
00:16:02 A. -- his opinion was that -- I can't even remember
00:16:04 sort of the -- I think he said multiple imputation
00:16:06 would have been a better way to go. I don't remember
00:16:12 the specifics about why it was better. Again, I
00:16:16 wasn't paying too close attention, but I know that
00:16:18 one of his issues had to do with the fact that NMES
00:16:20 wasn't multiply imputed.
00:16:24 Q. In your report in the Northwest Laborers case,
00:16:28 you do present an analysis of the results that you've
00:16:32 obtained from utilizing some NMES data; correct?
00:16:36 A. Yeah, in that -- the -- the report I again am
00:16:40 doing sort of sensitivity checks, and in that case I
00:16:42 am using the NMES to perform those.

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00:16:46 Q. And in using the NMES to perform those in both
00:16:50 the Northwest Laborers case as well as in your report
00:16:56 of November 6th, November 18th, and January 22nd, you
00:16:58 then were aware that Professor Rubin had at least
00:17:02 believed that a multiple imputation analysis should
00:17:02 be done; is that correct?
00:17:04 MR. McCARTER: Objection; mischaracterizes
00:17:06 Rubin's testimony.
00:17:10 A. Again, I was aware of his testimony in the
00:17:16 Minnesota trial. I had not seen his reports, I don't
00:17:20 believe, in any other -- well, any of the -- the Ohio
00:17:26 case or the -- the Washington case I don't believe
00:17:28 seeing those reports, at least I don't recall seeing
00:17:34 them, so I was aware of his comments about multiple
00:17:36 imputation.
00:17:38 Q. And a couple months -- you said that
00:17:42 approximately two months ago Mr. Biersteker had
00:17:44 raised the idea of having somebody, Rubin or
00:17:48 presumably somebody working with him, do a multiple
00:17:52 imputation analysis of the NMES data; correct?
00:17:54 A. Yes, I was -- there was some mention made of
00:17:54 that.
00:17:58 Q. And I take it then that if the multiple
00:18:04 imputation analysis had been done, you would have or
00:18:08 could have, if it was made available to you, put it

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00:18:12 in your November 6th report, if it was done prior to
00:18:12 that time; correct?
00:18:16 A. Had it been done, I think I would have put both
00:18:20 the analysis that I actually put in there, and had I
00:18:24 had time to do the analysis, depending on when they
00:18:26 gave me the data, put both in as again, you know,
00:18:28 additional sensitivity checks.
00:18:32 Q. And that could have been done again if you had
00:18:34 it in advance, you could have done it before your
00:18:36 November 6th report, your first report in this case;
correct?
00:18:40 A. Well, I -- I guess if I had enough time --
00:18:40 Q. Sure.
00:18:42 A. -- Enough advance notice, I probably could have
00:18:44 done it, yes.
00:18:46 Q. All right. And then -- but that -- that
00:18:50 multiple imputation analysis wasn't -- wasn't
00:18:54 provided to you prior to your November 6th report;
correct?
00:18:58 A. I have not seen it at all. I mean I have yet to
00:19:02 get it, so yes, it wasn't provided before.
00:19:04 Q. Could you do a multiple imputation analysis?
00:19:06 A. Could I do it?
00:19:06 Q. Yes.
00:19:08 A. How much time would you give me?

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00:19:10 Q. As much time as you need.
00:19:14 A. Well I'd have to, you know, become more,
00:19:20 quote-unquote, "expert in multiple imputations," but
00:19:22 I think with enough time I could do it.
00:19:24 Q. Have you been asked to do it?
00:19:24 A. No.
00:19:28 Q. Do you know why you haven't been asked to do it?
00:19:34 A. No, I just -- I mean I guess I'm speculating,
00:19:34 but --
00:19:36 MR. McCARTER: Well, you don't -- you don't
00:19:40 have to speculate.
00:19:40 A. I don't know why.
00:19:42 Q. Well, do you -- is the reason that you're not
00:19:44 being asked to do it is that to your understanding
00:19:48 Professor Rubin has been asked to do it, or is that a
00:19:50 reason perhaps?
00:19:50 A. That may be a reason. I don't know.
00:19:54 Q. And do you know a Professor Schaffer at Penn
State University?
00:19:56 A. No, I don't.
00:19:58 Q. Have you ever heard of him?
00:20:04 A. There may have been a mention of his name at one
00:20:06 point, but I've never met him or probably ever read
00:20:08 anything he's ever done.
00:20:10 Q. I'm just asking have you ever heard his name

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00:20:12 mentioned?

00:20:16 A. I may have heard Biersteker mention it once in

00:20:16 passing.

00:20:18 Q. And his name was mentioned in the context of

00:20:22 helping Professor Rubin perform a multiple imputation

00:20:24 analysis or some other context?

00:20:26 MR. McCARTER: Objection. He said he may

00:20:26 have heard it.

00:20:28 Q. Yeah, you may have heard his name.

00:20:34 A. Yeah, I -- I recall Mr. Biersteker mentioning

00:20:36 that somebody was helping Rubin. I don't recall

00:20:42 whether he mentioned his name, and if he did, what

00:20:42 the name was.

00:20:46 Q. You understood that there were deadlines for the

00:20:48 submission of reports in this case; did you not?

00:20:56 A. Yeah, I think, you know, at various times, you

00:21:00 know, either Mr. McCarter or Mr. Biersteker, most

00:21:04 likely Mr. McCarter, had said you need to have a

00:21:06 report done by this date, you need to have a

00:21:08 supplemental done by this date, and so on and so

21 forth.

00:21:12 Q. Now the -- let's go ahead and -- showing you

00:21:16 what's been marked as Exhibit 1 to this deposition,

00:21:36 is that the current copy of your curriculum vitae?

00:21:38 (Witness reviewing document.)

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00:21:48 A. Yeah. There may have been one change. I think
00:21:54 I refereed for another journal since November.
00:21:56 Q. What's the journal?
00:22:00 A. Scandinavian Journal of Economics. I don't
00:22:02 think it's on here.
00:22:06 Q. All right. And what is Exhibit 2?
00:22:12 A. Exhibit 2 is my November 6th, 1998 report in the
00:22:18 Iron Workers Local No. 17 Insurance Fund case versus
00:22:22 Philip Morris and others, et al.
00:22:24 MR. McCARTER: I just want to note here
00:22:26 that I don't believe that that's a complete copy of
00:22:28 the report. I'm not sure, I haven't looked through
00:22:30 it, but there's an original file and he attached his
00:22:34 Massachusetts report in response to a report of
00:22:36 Harris, just to note for the record.
MR. WITHEY: Sure.
00:22:38 THE WITNESS: This.
00:22:40 MR. McCARTER: Is it on there?
00:22:42 THE WITNESS: Well just the title page.
00:22:44 MR. WITHEY: Yeah, I didn't attach the
00:22:48 entire Massachusetts report, I just put the title
page on, but thank you for noting that.
00:22:50 MR. McCARTER: Sorry for interrupting.
00:22:52 Q. Had you completed your work in this case as of
00:22:56 the time this report as far as you were concerned?

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00:23:00 A. Again, I think my -- my task was to comment on
00:23:10 whatever Plaintiffs' experts were -- models they were
00:23:16 developing, and if there were further developments, I
00:23:20 may have further comments, and I'm sure I'll be asked
00:23:24 to comment on their trial testimony and future
00:23:24 things.
00:23:28 Q. Well then you submitted Exhibit 3; is that a
00:23:30 copy of your supplemental report of November 18th,
00:23:32 1998?
00:23:34 A. Yes, it is.
00:23:36 Q. And by that time you had received Dr. Harris'
00:23:42 report on -- on damage -- on the damage model dated
00:23:46 October 22nd and November 6th; correct?
00:23:50 A. I believe so, yes.
00:23:52 Q. And you had the opportunity in this supplemental
00:23:56 report, Exhibit 3, to then give your opinions about
00:24:02 both Dr. Lauer's supplemental report as well as both
00:24:06 reports of Dr. Harris that had been submitted as of
00:24:08 that time; correct?
00:24:12 A. Yeah, I had, I believe, in this report
00:24:18 summarized my thoughts as of that time or at least in
00:24:18 brief form.
00:24:36 Q. Now you -- you understood then that Dr. Harris
00:24:44 filed two additional reports of December 3rd and
00:24:46 December 20th, 1998; correct?

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00:24:48 A. Yes, I've seen those reports.
00:24:52 Q. And did those reports address the issue of the
00:25:02 -- of the damage model?
00:25:04 MR. McCARTER: Objection, vague.
00:25:06 Q. By "damage model" I'm referring to aside from
00:25:16 his conspiracy-, misconduct-attributable damages, I'm
00:25:20 just referring to the issue --
00:25:20 A. Right.
00:25:24 Q. -- of the smoking-attributable expenditures?
00:25:32 A. I believe the December 3rd report further
00:25:40 elaborated on the estimations of Dr. Dement and Mr.
00:25:44 Roberts in terms of over-underestimation of the
00:25:46 mortality ratio approach.
00:25:50 Q. How about the December 20th report?
00:26:08 A. Well the December 20th report the only thing I
00:26:10 recall that -- I mean in some sense it relates to it
00:26:12 but not directly, but --
00:26:12 Q. Okay.
00:26:16 A. -- I don't recall any sort of direct mention off
00:26:20 the top of my head of the Dement and Roberts report.
00:26:24 Q. At any rate, on January 22nd, you filed -- which
00:26:26 was last week, you filed another supplemental report;
correct?
00:26:28 A. Correct.
00:26:28 Q. And that's Exhibit 4?

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00:26:30 A. Yes.
00:26:36 Q. Now in Exhibit 4 on page 2 on footnote 1 you
00:26:38 cite a number of articles from the literature related
00:26:42 to the healthcare costs of smoking and -- and the
00:26:42 like; correct?
00:26:44 A. Correct.
00:26:48 Q. Now those were -- those were documents that were
00:26:50 available to you prior to filing your November 6th
00:26:50 report; correct?
00:26:52 A. Correct.
00:26:54 Q. Did you cite them in your November 6th report,
00:26:56 which is Exhibit 2?
00:27:00 A. I think they were on the document list that I
00:27:04 provided with that. I don't know if it's actually in
00:27:06 the report. But I remember giving a document list at
00:27:06 one point.
00:27:12 Q. The list of bibliography?
00:27:14 A. Yeah, of bibliography.
00:27:16 Q. Well let's see if we can find it. We might as
00:27:22 well get that marked. See, those aren't your
00:27:22 publications; correct?
00:27:26 MR. McCARTER: The bibliography you mean?
00:27:30 MR. WITHEY: Yeah, the articles in footnote
00:27:30 1?
00:27:32 A. These aren't my publications.

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00:27:34 Q. Correct.
00:27:38 A. I mean I -- these are different people, right.
00:27:40 Q. Right.
00:27:50 So you recall submitting a bibliography list at
00:27:52 some point in time that contained these articles?
00:27:54 A. I recall that, yes.
00:27:56 Q. Okay. Let's see if we can find it here. Maybe
00:28:00 it's in your CV. Was it in your CV (examining
00:28:02 document)? Nope.
00:28:06 A. I don't think so.
00:28:10 Q. Okay. Here it is. I've got it. We can get a
00:28:34 copy of this later. It's the two-page list of
00:28:36 documents relied upon in the Iron Workers Local #17
00:28:36 case?
00:28:38 A. Yes, I believe it is.
00:28:40 Q. All right. And that -- that was actually --
00:28:42 A. I think there's a -- well there's a page -- the
00:28:44 one page has two sides to it.
00:28:48 Q. Right, three pages then. I had it as -- marked
00:28:52 as part of your curriculum vitae --
00:28:54 A. Oh.
00:28:58 Q. -- but apparently it didn't make the -- make the
00:29:00 list here, but we'll go ahead and attach that as --
00:29:04 Well when was this submitted, if you recall?
00:29:08 A. I thought it was submitted with my first report.

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00:29:12 Q. Okay. And this is a list of 32 articles
00:29:16 published in the -- in the literature?
00:29:16 A. Yes.
00:29:18 Q. So you were then obviously aware of these
00:29:22 articles at the time of the November 6th report;
correct?
00:29:22 A. Correct.
00:29:24 Q. You had read them?
00:29:26 A. I don't think I had read them fairly recently,
00:29:28 but I had read them at some point.
00:29:30 Q. And you -- what was your process in collecting
00:29:34 these 32 articles; in other words, why did you submit
00:29:36 these articles?
00:29:42 A. Mainly as examples of sort of a lifetime
00:29:46 approach to estimating the economic costs of smoking.
00:29:48 Q. These were generally articles that were
00:29:52 published in the peer-reviewed literature; correct?
00:29:52 A. Correct.
00:29:54 Q. You considered them, you know, good examples of
00:29:58 the kind of work that went into calculating what was
00:30:02 called the medical costs of smoking or healthcare
00:30:02 costs of smoking?
00:30:04 MR. McCARTER: Objection, vague.
00:30:08 A. I don't think I necessarily said they were good
00:30:12 or not, but I just said that these were examples. I

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00:30:14 looked for examples, and these are what I found.
00:30:16 Q. Well these are the best examples you could come
00:30:18 up with; fair enough?
00:30:22 A. Well they're, I think at least to my knowledge,
00:30:28 the ones that have been published. That I'm aware
00:30:30 of. I haven't --
00:30:32 Q. Well on page 2 of your Exhibit 4, which is the
00:30:36 January 22nd report, you analyze those documents; did
you not?
00:30:36 A. Yes.
00:30:38 Q. And you could have done that analysis for
00:30:40 November 6th; correct?
00:30:46 A. I hadn't made those calculations at that time.
00:30:54 Q. Well, no, I'm asking whether you could have done
00:31:00 the analysis that is contained upon -- I'm not asking
00:31:00 whether you did it.
00:31:00 A. Oh.
00:31:04 Q. I'm saying you could have done it by November
00:31:10 6th. In other words, what you wrote on page 2 in the
00:31:12 first paragraph of Exhibit 4 and in citing those
00:31:18 articles, you could have written on November 6th if
00:31:20 you had wanted to?
00:31:26 A. Well, I could have, yes, and I sort of was --
00:31:30 viewed this later as a -- essentially to some extent
00:31:34 a sensitivity test of my estimates or the sensitivity

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00:31:38 of -- of using a relative risk versus lifetime, but
00:31:42 had I -- you know, at that time either had the time
00:31:44 or whatever, I could have done it.
00:31:52 Q. At any rate, you relied upon those articles --
00:31:54 A. Right.
00:31:56 Q. -- both on November 6th as well as the January
00:31:56 22nd; correct?
00:31:58 A. Correct.
00:32:00 Q. You considered them an authoritative for that
00:32:02 purpose; correct?
00:32:04 A. They have been published, and I don't know if
00:32:06 they're all refereed, but have been published in
00:32:06 journals.
00:32:08 Q. And they're authoritative?
00:32:08 MR. McCARTER: Objection.
00:32:12 Q. You cite them as authority, how does that sound?
00:32:14 A. Well I cite them as being published.
00:32:16 Q. Well, when you use the word "relied upon" in the
00:32:16 --
00:32:18 A. Oh.
00:32:20 Q. -- in the list of documents that we're going to
00:32:24 attach as soon as we get someone to copy at a break,
00:32:28 you meant that they -- you found them authoritative
00:32:32 to -- enough to cite them in an article -- in a
00:32:36 report that you submitted in court; correct?

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00:32:36 MR. McCARTER: Objection, vague.
00:32:40 A. Well I think what I -- my goal was just to take
00:32:46 those studies, which may have flaws, may not, but
00:32:52 just take those studies that take a lifetime approach
00:32:58 and summarize sort of the implicit relative risk that
00:33:04 they estimate using a lifetime approach. That was
00:33:04 really my goal.
00:33:08 Q. Does each of them estimate a lifetime relative
00:33:08 risk?
00:33:12 A. No, what I did was took the information from
00:33:18 each study and essentially calculated the relative
00:33:26 risk or imputed it from their -- from their data that
00:33:26 was in their reports or papers.
00:33:30 Q. So your -- is it your -- the question I have is
00:33:32 whether it's your testimony that these studies, each
00:33:38 of them, presented data on the lifetime relative risk
00:33:40 between smokers and nonsmokers?
00:33:42 MR. McCARTER: Objection, vague.
00:33:46 A. I don't know if they necessarily called it a
00:33:52 relative risk, they -- they presented data on -- for
00:33:56 having -- dealing with the lifetime costs of smoking
00:34:04 in terms of medical costs, and from that you can take
00:34:10 those costs and convert it into a lifetime relative
00:34:12 risk.
00:34:14 Q. And in the process of doing that -- that

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00:34:18 presentation of data, did those articles also present
00:34:22 the background and reasons upon which that data was
00:34:26 -- a basis upon which that basis was presented? Let
00:34:28 me rephrase the question.
00:34:30 Did the articles that you've relied upon and
00:34:34 cited present their analysis of the -- of the data
00:34:36 presented, generally?
00:34:40 A. Yeah, I think that the papers usually summarized
00:34:40 their analysis.
00:34:44 Q. And they also presented analysis in that context
00:34:48 of the medical costs of smoking or healthcare costs
00:34:48 of smoking; correct?
00:34:50 A. Right.
00:34:52 Q. And you also considered that analysis as part of
00:34:56 the presentation of the data; fair enough?
00:34:58 MR. McCARTER: Objection.
00:35:00 Q. My point is --
00:35:02 In light of the objection, my point is: It
00:35:06 wasn't just a data chart, it was an analysis which
00:35:08 presented data that you relied upon; correct?
00:35:12 MR. McCARTER: Objection.
00:35:20 A. The -- yeah, they -- I -- most -- to my
00:35:22 recollection, the papers don't just simply present
00:35:26 numbers. I mean they do some statistical analysis.
00:35:28 Q. Right. And they give some reasons for the

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00:35:30 approach that they take; correct?
00:35:34 A. Most likely.
00:35:38 Q. And you also read and considered those reasons
00:35:42 for the approach that they took; correct, in the
00:35:44 articles that you relied upon?
00:35:50 A. Well for my purposes I -- all I was interested
00:35:54 in is sort of taking an approach similar -- somewhat
00:35:58 similar to what Professor Harris did, only instead
00:36:06 using studies that took a lifetime approach, and then
00:36:08 calculating the relative risk, the median relative
00:36:10 risk from those studies.
00:36:14 Q. No, I understand what you did and I understand
00:36:14
00:36:16 A. But I wasn't critical in the sense that --
00:36:20 whatever I could find that was published I put in,
00:36:22 now I may have not found everything, but everything
00:36:26 that I could find -- I wasn't critical in the sense
00:36:30 of saying, Well, this paper had this problem,
00:36:32 therefore I'll throw it out.
00:36:36 Q. Yeah, but I guess I'm asking a little bit
00:36:38 different question. I understand your answer and
00:36:40 appreciate it. But what I'm saying is when you read
00:36:42 the articles, you knew that the data of the lifetime
00:36:46 risk was presented in some context and some analysis
00:36:50 of the authors of the paper; correct? It wasn't just

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00:36:52 the presentation of data, they gave reasons for the
00:36:54 data that they were -- that they were presenting?
00:36:58 A. I think they may have given reasons for the
00:36:58 approach they took.
00:37:00 Q. All right. The reasons for. And I'm asking:
00:37:02 Did you read them, that part of the report?
00:37:06 A. Well I at some point read through all the
00:37:06 reports.
00:37:12 Q. Okay. And so you then read the reasoned
00:37:14 analysis, if you want to call it that, that they
00:37:18 presented; right, so that you could understand how
00:37:20 they got to the data that they were giving; correct?
00:37:22 A. Yes, at some point.
00:37:24 Q. And at any time did you find any fault, you say
00:37:28 I'm not going to use this because the reasoning that
00:37:30 went with it was just -- was just wrong?
00:37:34 A. Again, I -- the only thing I was checking for in
00:37:36 trying to make a decision of whether to include or
00:37:40 exclude a particular study would be sort of my
00:37:42 assessment of whether the -- the sort of general
00:37:44 approach was what I would consider a lifetime
00:37:44 approach.
00:37:48 Q. Okay. But in presenting the lifetime approach
00:37:50 these authors, all of them, gave some reasons, some
00:37:54 justification, if you will, for that approach;

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correct?

00:37:54 A. They may have, yes, I --

00:38:02 Q. All right. And -- all right. And I think we

00:38:04 established you at least read the articles that you

00:38:04 said you relied upon?

00:38:06 A. Yes, I've read them.

00:38:10 Q. And there wasn't that you can think of now where

00:38:10 you say, Oh, wait a minute this approach is all

00:38:14 wrong, I'm not going to cite this? You never said

00:38:16 that because obviously you ended up citing it; fair

00:38:16 enough?

00:38:22 A. Again, relative to what sort of my inclusion

00:38:26 rule is just giving examples of papers that used the

00:38:28 lifetime approach. The only kind of rule for

00:38:32 inclusion or exclusion was whether it was published

00:38:34 and whether I considered it to have taken some form

00:38:36 of lifetime approach or look over time.

00:38:40 Q. Well, and to be reliable because you relied on

00:38:42 it; fair enough?

00:38:44 A. Well I mean in the sense that I refer to it I

00:38:46 relied upon it.

00:38:48 Q. Yeah. Okay. In other words, I'm saying -- I'm

00:38:52 just asking you -- what I'm trying to get to is if

00:38:56 there was any of the 32 you said, I'm not going to

00:38:58 rely upon this because this analysis and this

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00:39:02 approach is all wrong; you didn't say that as to any
00:39:04 of these 32 because you in fact said you relied upon
00:39:04 them; fair enough?
00:39:04 MR. McCARTER: Objection.
00:39:06 A. Well what --
00:39:08 MR. WITHEY: I'll withdraw the question.
00:39:12 Q. Let me be very clear. If you had found an
00:39:16 article and you read it and you say this is a totally
00:39:18 -- not totally -- if you had found an article and
00:39:22 read it and said, This is unreliable, you would not
00:39:22 have cited this; correct?
00:39:26 MR. McCARTER: Objection.
00:39:28 A. Well, I guess I'm confused from the document
00:39:30 list and from the nine studies. Relative to the nine
00:39:34 studies that are what I consider lifetime approach,
00:39:36 had I read an article and I said, This article is not
00:39:40 doing a lifetime approach, I wouldn't have then
00:39:42 included it as, quote-unquote, "a lifetime approach".
00:39:44 Q. Well of course, but that's a different
00:39:46 question. I'm asking whether you had considered the
00:39:48 analysis and the approach -- not the approach. If
00:39:50 you considered the analysis of a particular article
00:39:54 or the data they present unreliable, would you have
00:39:54 cited it?
00:39:56 MR. McCARTER: Objection.

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00:40:02 A. Again, I -- in terms of a lifetime approach, I
00:40:08 think my inclusion rule, I just wanted to see -- with
00:40:10 the only criteria being whether or not it was
00:40:14 published and whether or not it was a lifetime
00:40:18 approach, my sort of criteria for inclusion was
00:40:22 simply those two, and although I may have had
00:40:28 thoughts of, you know, what they could have done, I
00:40:30 didn't use that in this particular instance to
00:40:34 determine whether to include it or not.
00:40:36 Q. Well, I'm -- then I don't understand how you can
00:40:40 say this is a list of documents relied upon by you.
00:40:42 If you -- if you made a judgment, you did not
00:40:44 consider it reliable, the question is: Would you
00:40:46 have relied upon it?
00:40:46 MR. McCARTER: For what?
00:40:50 Q. I'm talking about numbers 1 through 32.
00:40:52 MR. McCARTER: For what purpose do you mean
00:40:52 "relied upon"?
00:40:56 Q. Well you said relied upon by McCall. I don't
00:40:58 know. For the purpose of writing his report and
00:41:00 getting a background on this data. Right now I'm
00:41:04 just talking about the list of the 32. You cited a
00:41:06 shorter list, although I think all nine are contained
00:41:08 within the 32.
00:41:08 A. Right.

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00:41:10 Q. Okay. Do you understand what I'm saying? In
00:41:14 other words, if you had read say number 30, I don't
00:41:16 even know which one it is, Warner's work, and you
00:41:20 read it and you say, Well, this is unreliable, I
00:41:22 can't rely upon this, then you wouldn't have included
00:41:24 it in this list of 32?
00:41:24 MR. McCARTER: Objection.
00:41:26 Q. Isn't that clear?
00:41:32 A. Well I believe, again, the list of 32 where some
00:41:34 were related to whatever opinions were in my first
00:41:40 report, others were examples of lifetime, some of the
00:41:44 lifetime approaches like weren't included in the nine
00:41:48 simply because they sort of just were methodological
00:41:50 papers without numbers, so I didn't use them to
00:41:54 calculate the relative risk, but I don't think -- and
00:41:56 in that sense I use them as examples of the lifetime
00:42:00 approach, and since it's, you know, in my report or,
00:42:02 you know, I want to give examples, in that sense I
00:42:06 relied upon it as published literature using the
00:42:08 lifetime approach.
00:42:10 MR. WITHEY: Would you read the question
00:42:48 back to him?
00:42:50 (The record was read by the reporter.)
00:42:52 MR. McCARTER: Same objection.
00:43:00 A. Again, I believe for many of those papers, my

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00:43:06 recollection is number 30 included what I did was
00:43:14 read the paper and just to determine sort of whether
00:43:18 or not they talk about a lifetime approach with
00:43:24 regard to estimating costs, I believe most of them
00:43:28 have to do with smoking, although some also talk
00:43:28 about alcohol and others.
00:43:30 Q. All right. So you didn't rely on all 32?
00:43:32 MR. McCARTER: Objection.
00:43:32 Q. Is that correct?
00:43:36 A. Well I relied upon them in the sense that I said
00:43:38 there are examples of this literature and these are
00:43:40 some.
00:43:42 Q. And I'm just asking you: Would you have relied
00:43:44 upon them if you considered them unreliable?
00:43:46 MR. McCARTER: Same objection.
00:43:48 A. Well, it depends how you define "unreliable".
00:43:52 Q. By your -- you used the word "rely"; correct?
00:43:54 A. Right.
00:43:58 Q. By your definition of "rely," does that impart
00:44:02 some assessment of they're reliability to you, sir?
00:44:04 A. Well my definition of "relied" in this case is
00:44:08 whether they satisfied certain criteria.
00:44:10 Q. Published in peer-review or other respected
00:44:12 journals; correct?
00:44:12 A. And --

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00:44:12 Q. Is that correct?
00:44:18 A. Yeah, I think, although -- I'm trying to see if
00:44:20 they were all published. Some may have been just
00:44:24 about reports from like the Congress or some
00:44:26 committee. Most of them are published. I think one
00:44:28 is CRS Report for Congress.
00:44:32 Q. So as I understand your testimony, even if you
00:44:34 had read a report that you believe to be unreliable
00:44:38 but it dealt with the issue of lifetime smoking
00:44:40 costs, you would have cited it; is that your
00:44:40 testimony?
00:44:42 MR. McCARTER: Objection.
00:44:44 A. Well my testimony is is that for my criteria of
00:44:50 inclusion what I consider -- I -- it's really -- I
00:44:54 define "relied" as sort of whether or not it
00:44:58 satisfied this criteria that I set out, and to the
00:45:02 extent that that criteria for at least the lifetime
00:45:04 papers were sort of just being published in a
00:45:08 journal, or I guess at least in one instance I think
00:45:10 that was also a lifetime approach, although no
00:45:14 numbers were presented, sort of just a -- a
00:45:18 government report, whether or not that satisfied the
00:45:22 criteria of -- in my opinion of whether it was a
00:45:24 lifetime approach.
00:45:26 Q. Okay. So you did not make any judgment about

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00:45:28 the reliability of the approach taken in these
00:45:30 articles then; is that correct?
00:45:30 MR. McCARTER: Objection.
00:45:34 A. Well, I just -- the determination I made, as I
00:45:38 said before, was just that if it satisfied this
00:45:40 criteria or not in my opinion.
00:45:42 Q. Read the question back.
00:45:54 (The record was read by the reporter.)
00:45:54 MR. McCARTER: Same objection.
00:45:56 A. Again, I may have looked at the reports and had
00:46:00 potential questions of certain aspects, but in terms
00:46:04 of inclusion or exclusion, I had the crit -- you
00:46:06 know, criteria that I've already stated.
00:46:08 Q. Read the question back.
00:46:14 We'll be here until you answer it.
00:46:16 MR. McCARTER: He has answered it about ten
times. You haven't asked him --
00:46:16 MR. WITHEY: He hasn't answered whether --
00:46:20 no, he hasn't answered it. Go ahead, try again,
00:46:40 Doctor. Read it again, please.
00:46:40 (The record was read by the reporter.)
00:46:42 MR. McCARTER: Same objection; it's vague,
00:46:46 compound. It's been asked and answered about 20
00:46:46 times.
00:46:46 Q. You can answer it.

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00:46:50 A. Again, if you want to take as my definition of
00:46:56 "relied" as satisfying those criteria that I gave
00:46:58 you, then I relied upon it.
00:47:00 Q. Well, do you understand there's a difference
00:47:02 between saying, Okay, what I'm going to do is go out
00:47:06 and find all of the articles in the literature that
00:47:08 refer to a particular topic, in this case lifetime
00:47:12 approach, if you want to call it, to the medical
00:47:14 costs of smoking, and I'm going to put those -- I'm
00:47:20 going to put those articles in a particular list, and
00:47:22 if they're published and if they have any discussion
00:47:26 of the lifetime approach, whether I agree with it or
00:47:28 not, or whether I consider it reliable, I'm going to
00:47:30 put it in this list? Is that what you did?
00:47:34 A. I think the only determination, again, was
00:47:38 published or in a -- in a government publication, if
00:47:40 you call report that, was whether I thought in my
00:47:48 opinion that they were, you know, analyzing or
00:47:52 talking about or making estimates using a lifetime
00:47:52 approach.
00:47:52 Q. Okay.
00:47:54 MR. McCARTER: I just want to clarify which
00:47:56 list you're talking about right now.
00:47:58 MR. WITHEY: I'm still on the 32.
00:48:00 MR. McCARTER: You're on the 32 and not the

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00:48:04 one cited in footnote 1 on page 2.

00:48:04 MR. WITHEY: Right. I'm going to get to that. Don't worry.

00:48:06 MR. McCARTER: Okay.

00:48:08 Q. I'm just talking about the 32 that you relied

00:48:10 upon, and I'm asking you whether by what you're

00:48:12 really saying is -- what I hear you saying, and

00:48:14 correct me if I'm wrong, is I went out to the

00:48:16 literature and government publications, I identified

00:48:18 those articles that I could find that dealt with the

00:48:22 lifetime approach, and I included them within that

00:48:22 list, and you did not --

00:48:22 A. Right. I'm --

00:48:26 Q. That was your criteria for including within this

00:48:28 list, as this thing from the nine --

00:48:30 And you're quite right, counsel, there's

00:48:30 another set of questions about the nine.

00:48:34 MR. McCARTER: The problem that I see is

00:48:36 the list in footnote 1 of the lifetime studies is a

00:48:38 subset of the big list.

MR. WITHEY: Right.

00:48:40 MR. McCARTER: And when you say "you

00:48:42 include it" a subset's always included, so I don't

00:48:46 know if you're talking about the whole 32 or just the ones mentioned in --

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00:48:48 MR. WITHEY: Right now I'm talking about
00:48:48 the 32.
00:48:48 MR. McCARTER: All of them?
00:48:48 MR. WITHEY: Yes.
00:48:50 A. Okay. Well, in the 32 -- I guess I should
00:48:54 clarify. The 32 have more than the nine that are --
00:48:58 or discuss the lifetime approach, I believe the nine
00:49:00 to some extent are -- are papers that presented
00:49:06 enough information, empirical information for me to
00:49:12 derive a relative risk, but there are some papers in
00:49:16 that 32 that -- that are in there for other purposes
00:49:20 other than lifetime. Not all 32 are lifetime.
00:49:24 Q. Okay. Well right now we're talking about the 32
00:49:24 on the list that you say document --
00:49:28 A. Right, not all 32 are lifetime.
00:49:28 Q. I know.
00:49:30 A. But among the lifetime ones, that was the --
00:49:32 like the Fox article.
00:49:36 Q. All right. But -- but -- all right. Let's talk
00:49:40 about the 32. What was the criteria for inclusion
00:49:42 within the 32 then?
00:49:46 A. Well, whether -- I mean there were different
00:49:52 criteria. I, again, as I mentioned before, included
00:49:58 those papers that focused on or -- or talked about
00:50:02 the lifetime approach, that was one group of papers

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00:50:08 in there, that's probably the majority, and then
00:50:12 there were a few other papers having to do with other
00:50:16 reasons that -- you know, other aspects of the
00:50:20 Plaintiffs' analysis other than the choice between a,
00:50:26 you know, relative risk or a prevalence approach or
00:50:28 incidence-based lifetime approach.
00:50:30 Q. Did you make any judgment in collecting this
00:50:34 list of 32 that you relied upon as to whether the
00:50:38 documents were reliable -- excuse me -- the studies
00:50:38 were reliable?
00:50:48 A. Again, I -- I -- in my, you know -- some of the
00:50:58 studies, you know, may have had certain problems, but
00:51:02 for my purposes, you might say I was relying on
00:51:06 certain aspects of the study, and the aspects were in
00:51:08 at least the lifetime approach, you know, that they
00:51:12 satisfied the criteria, that they were examples of
00:51:14 the lifetime approach.
00:51:20 Q. Did -- did you ever go through the thought
00:51:28 process, Dr. McCall, of looking and reading the
00:51:32 publication of literature as listed on this list 1
00:51:34 through 32 and making the determination Is this a
00:51:38 reliable analysis? Is this a reliable report? Is
00:51:40 this a reliable study?
00:51:42 MR. McCARTER: Objection.
00:51:46 Q. Did you ever yourself make that judgment as to

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00:51:46 each of these articles?
00:51:56 A. Again, I think for each one I was determining in
00:52:04 my sense what I considered reliable, whether or not
00:52:06 in a narrow sense that they were using a lifetime
00:52:08 approach, which I consider the correct approach.
00:52:12 Q. So you did have analysis as to whether they were
00:52:14 reliable or not then I take it?
00:52:16 A. Relative to the lifetime approach, for the -- at
00:52:18 least the subset which is the majority of these
00:52:18 papers.
00:52:20 Q. So the answer is yes?
00:52:22 A. Yes, to that extent.
00:52:24 Q. All right. So now let's look at the nine which
00:52:30 is found on Exhibit 4 on page 2. These were -- these
00:52:34 were nine lifetime studies of medical costs of
00:52:40 smoking that -- that you cite in this article --
00:52:42 excuse me -- in this report; correct?
00:52:44 A. Correct.
00:52:46 Q. So I take it you've read these articles;
correct?
00:52:46 A. Yes.
00:52:50 Q. And again, I take it you consider their approach
00:52:50 reliable; correct?
00:52:58 A. Again, I was -- the purpose of this here was
00:53:06 just to take those reports that used a lifetime

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00:53:12 approach and use those -- all of which I could
00:53:16 somehow derive a relative risk or what you might call
00:53:20 a lifetime relative risk from, and calculate the
00:53:24 median and see what that was. In terms of inclusion
00:53:26 or exclusion in this list of nine, I guess I may have
00:53:30 mentioned before, but maybe the third criteria is
00:53:32 that I had to have sufficient information to be able
00:53:34 to, you know, back out a relative risk, and the other
00:53:38 two being that they were a lifetime approach and they
00:53:44 were published. Now I may have not found every
00:53:44 paper.
00:53:46 Q. Well, did you look for every paper?
00:53:48 A. I tried to look for every paper. I did some
00:53:50 searches on Medline.
00:53:52 Q. What search engine did you use?
00:53:54 A. Medline.
00:53:56 Q. What key word did you use?
00:54:00 A. I tried "lifetime," I tried "smoking," I tried
00:54:02 "cost of smoking". I tried a number of different
00:54:04 things.
00:54:06 Q. Did you do it yourself or did you have an
00:54:08 assistant do it?
00:54:08 A. I did it myself.
00:54:12 Q. And when did you do this?
00:54:20 A. Well the first time I did it was a long time

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00:54:26 ago, some time, gosh, you know, before the Minnesota
00:54:30 trial, some time when I was doing reports for
00:54:30 Minnesota.
00:54:32 Q. Okay.
00:54:36 A. Then I remember doing it again, was it maybe a
00:54:44 week or two ago just to see if there had been
00:54:44 anything in between.
00:54:48 Q. Okay. So you had already done this analysis of
00:54:52 the lifetime approach with these same articles then
00:54:56 about -- you know, months ago, let's put it that
00:54:58 way.
00:55:00 A. Well, no, I think I was maybe misunderstanding
00:55:04 your question. I didn't do the analysis. I thought
00:55:08 your question was, you know, when I was searching for
00:55:12 lifetime papers, you know, when have I performed
00:55:16 searches for lifetime papers, and I've done it a
00:55:18 couple of times at least, maybe even three or four
00:55:20 times, I can't remember all the times, but I remember
00:55:22 the first time was at some point during the -- my
00:55:26 work in the Minnesota litigation I remember searching
00:55:30 through Medline for papers regarding the costs of
00:55:32 smoking, and then I remember doing it again just a
00:55:36 couple weeks ago. I may have done it another time.
00:55:38 I've gone through Medline a few times, I don't
00:55:42 remember all the times, but that's sort of the first

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00:55:44 time and the last time.
00:55:46 Q. Why didn't you include this in your November 6th
00:55:46 report?
00:55:48 A. Include what?
00:55:50 Q. What we're talking about, this analysis of the
00:55:52 lifetime approach.
00:55:56 A. I didn't -- hadn't done it at that time.
00:56:00 Q. Now going back to the multiple imputation, did
00:56:02 you have an understanding then that you would be
00:56:04 provided with the results of the multiple imputation
00:56:08 analysis so that you could present your January 22nd
00:56:10 report a week before this deposition?
00:56:18 A. You know, I was given some indication that there
00:56:22 might be available this multiple imputation at some
00:56:24 point. I don't know whether there was dates
00:56:26 specified.
00:56:28 Q. Did you understand that if you were going to
00:56:30 submit a supplemental report, it was due a week
00:56:34 before your deposition; in other words, the 22nd of
00:56:34 January?
00:56:38 A. I think Mr. McCarter mentioned that I needed to
00:56:40 have a supplemental done by that time.
00:56:42 Q. Did you ever tell him, Well, if you're going to
00:56:46 do this multiple imputation, I better have it before
00:56:50 the 22nd because I got to submit a report then, words

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00:56:50 to that effect?
00:56:56 A. I think I might have mentioned something about
00:57:00 whether or not I would have multiply-imputed data by
00:57:00 that time or not.
00:57:00 Q. What did he tell you?
00:57:04 A. I think he said he didn't know because he hadn't
00:57:10 talked to Biersteker, and I think Biersteker had more
00:57:16 information about it. At least that's my
00:57:16 recollection.
00:57:36 Q. Had the -- and did you understand then that your
00:57:40 final supplemental report was due the 22nd of
00:57:42 January; correct?
00:57:44 MR. McCARTER: Objection.
00:57:50 A. I was under no understanding that it was,
00:57:54 quote-unquote, "my final supplementary report". I
00:57:56 just knew that there was a supplementary report due
00:57:58 at least a week before our deposition.
00:58:02 Q. You understand that the trial's coming up on
00:58:02 February 22nd, --
00:58:04 A. Yes.
00:58:06 Q. -- around that time? And you understand that
00:58:08 the purpose of this deposition is to allow me to ask
00:58:10 you questions about all the opinions that you have in
00:58:12 this case?
00:58:16 A. Well, I mean I guess the opinion I can give is

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00:58:20 that, you know, I may do another sensitivity analysis
00:58:22 with some multiply-imputed data.
00:58:26 Q. Well, did you understand that the reason for
00:58:28 getting in a report one week in advance of the
00:58:30 deposition was so that I could prepare to ask you
00:58:32 questions about all your opinions in the case?
00:58:36 A. Well I think I might have mentioned something
00:58:38 about multiply-imputed data in my report.
00:58:40 Q. Yeah, and you didn't have the data, did you?
00:58:46 A. Although I misspelled it.
00:58:46 Q. No, that's spelled right.
00:58:50 A. No, at that time I didn't, but I think I
00:58:52 mentioned that when it's available that I might.
00:58:54 Q. Well you understand that there's a basic
00:58:56 fairness in having a deposition so that you can give
00:59:00 me the benefit of your opinions that you'll give at
00:59:02 trial so that there's no surprises at trial that
00:59:06 you're going to come up with some additional data or
00:59:08 some additional analysis at trial that we haven't had
00:59:12 the chance to ask you about. Did you have that basic
00:59:12 understanding from talking with counsel?
00:59:16 A. I guess my understanding was that I should make
00:59:18 you aware of what -- what I may testify -- may
00:59:24 testify about, so there is no surprises, but if I do
00:59:28 an analysis with multiply-imputed data, I'll be sure

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00:59:28 to send it to you.
00:59:32 Q. Well, but I'm here for your deposition. There's
00:59:36 no other depositions going to be held, Doctor. This
00:59:36 is it, this is your chance to testify about what
00:59:40 opinions you have. Obviously, for the record, we'll
00:59:44 say that if you're supplied any multiply-imputed or
00:59:46 multiple-imputed data that you would not be able to
00:59:48 testify about that. You understand our position in
00:59:48 that regard at least?
00:59:50 A. Yes.
00:59:50 Q. All right.
01:00:10 So I take it that you may not have completed
01:00:12 your work in this case; is that correct?
01:00:20 A. I guess I -- yeah, it's what I stated in the end
01:00:22 of my report, I will -- may be doing some sensitivity
01:00:28 analysis with multiply-imputed data, and also, you
01:00:32 know, if there's any other -- I received fairly
01:00:38 recently some computer files from Dr. Harris which I
01:00:40 haven't had time to really look in detail at, and I
01:00:44 may have further comments on that, as well as I guess
01:00:50 potential, you know, analyses of some potential
01:00:52 rebuttal experts.
01:01:02 Q. Had you -- had you prepared a computer disk by
01:01:04 November 6th, 1998?
01:01:10 A. I thought I did. I thought I turned it in with

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01:01:14 -- I know there was computer disks with each report,
01:01:18 and I thought they came -- I think the sequence was I
01:01:22 may have faxed the report and said that the computer
01:01:26 disc would be FedEx'd and you'll get it the next day
01:01:28 along with a hard copy of the report.
01:01:32 Q. Did you yourself FedEx it?
01:01:32 A. I believe so.
01:01:38 Q. Who did you Federal Express it to?
01:01:40 A. Well, I'm trying to remember if I did for each
01:01:44 case. There was a lot of other cases I was working.
01:01:46 Some of them I did. I'm trying to see whether -- I
01:01:48 know that the last report I FedEx'd it to you.
01:01:52 Q. But you don't recall Federal Expressing the
01:01:56 computer disk covering the November 6th report to us,
01:01:56 do you?
01:02:00 A. I'm pretty sure I did, but I'm not 100 percent
01:02:00 sure.
01:02:06 Q. Do you refer to the computer disk in Exhibit 2,
01:02:08 your November 6th report?
01:02:16 A. I don't know if I refer to it in the report.
01:02:28 MR. McCARTER: Do you want to take -- go
01:02:28 through the whole thing?
01:02:30 MR. WITHEY: I haven't seen it in there,
01:02:32 but if you want to --
01:02:34 A. I may not have. I don't recall.

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01:02:36 Q. What was contained on that computer disk?
01:02:42 A. I believe the programs that were used to
01:02:48 generate, certainly to generate the tables, and then
01:02:52 I may have made mention of other numbers that I made
01:02:56 tables of, and presumably whatever numbers I had in
01:03:00 my report the computer disk contained programs that
01:03:02 would allow you to calculate them.
01:03:06 Q. So it would be important information for someone
01:03:10 reviewing this report and assessing it to have; fair
enough?
01:03:10 A. Right.
01:03:12 Q. And if you could look through your
01:03:16 correspondence file or any mailing or any evidence
01:03:20 that you actually did either Federal Express or mail
01:03:26 that computer disk to us or to any defense lawyer
01:03:30 around the time of November 6th or the next day,
01:03:32 could you look through your files to see if that's
01:03:38 available, if you have any evidence of having mailed
01:03:40 it or Federal Expressed it?
01:03:40 A. I will certainly look.
01:03:40 Q. All right.
01:03:42 A. But I believe if I Federal Expressed something,
01:03:46 I just have evidence of Federal Express, but not the
01:03:48 exact contents of the Federal Express.
01:03:50 Q. Okay. Great.

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01:03:50 MR. McCARTER: Have you received that?
01:03:52 MR. WITHEY: No.
01:03:54 MR. McCARTER: This is the first time you're raising it?
01:03:56 MR. WITHEY: The report doesn't refer to the disk.
01:03:58 MR. McCARTER: The Northwest Laborers report had a similar analysis, and you received a disk with that. I would think that you would have known. Do you want me to --
01:04:08 MR. WITHEY: It's not our obligation to try to find this out, but anyway let's -- we don't need to deal with this on the record.
01:04:14 MR. McCARTER: All right.
01:04:20 Q. Doctor, let me ask you some questions -- I'm going to ask you some questions about your expertise or lack of expertise or your experience. By the term "expertise" I'm going to define that as having an advanced degree in a particular topic, subject, and having published in the relevant literature surrounding that -- that discipline.
01:04:42 Do you understand the definition?
01:04:44 A. Yes.
01:04:46 Q. All right. And by that sense you, you're not an epidemiologist or have any expertise in epidemiology;

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is that correct?

01:04:56 A. Depends how you define "epidemiology". I'm not

01:05:00 -- I don't have a degree in it, but you're defining

01:05:02 what you mean by a published paper.

01:05:06 Q. Right. Well I'm saying both, you have to have a

01:05:06 degree and published?

01:05:10 A. Well it's inclusive, yeah. I don't have a

01:05:12 degree in epidemiology, so the answer is no.

01:05:14 Q. You're not a medical doctor; correct?

01:05:14 A. Correct.

01:05:16 Q. Do you -- have you published in the -- or strike

01:05:18 that.

01:05:20 In your CV you have a list of publications,

01:05:22 Exhibit 1; correct?

01:05:22 A. Yes.

01:05:28 Q. Could you identify any publication that deals

01:05:34 with the topic of the study of diseases in human

01:05:42 populations, including their causes?

01:05:44 (Witness reviewing document.)

01:05:48 A. I don't have in my CV because I haven't written

01:05:48 a paper ,--

01:05:50 Q. Okay.

01:05:52 A. -- but I just presented a -- actually a seminar

01:05:58 at OSHA having to do with latex allergies and the

01:06:04 diseases revolving around latex allergies.

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01:06:06 Q. And are you a person that diagnoses diseases in
01:06:08 human beings?
01:06:08 A. No.
01:06:12 Q. Are you a person who applies the tools of
01:06:22 epidemiology to make -- to determine the causes of
01:06:24 diseases in populations?
01:06:24 A. No.
01:06:30 Q. Do you -- are you a person who has the expertise
01:06:36 to determine of the various risk factors that cause
01:06:40 or may cause diseases in the population which are --
01:06:44 have greater risks to human beings versus others that
01:06:48 have lesser risks; is that a something that you're an
01:06:48 expert in?
01:06:54 A. In a statistical sense?
01:06:56 Q. No, in a general sense.
01:07:00 A. I think I have the expertise to look at
01:07:04 statistical analyses regarding relative risk and
01:07:06 comment on the statistical properties.
01:07:08 MR. WITHEY: Do you want to read the
01:07:08 question back to him, please.
01:07:30 (The record was read by the reporter.)
01:07:32 MR. McCARTER: I'm going to object on
01:07:32 vagueness grounds.
01:07:38 A. Well I mean, for example, in this latex allergy
01:07:40 study I'm looking at, whether the occupation you're

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01:07:44 in is -- increases sort of the relative risk of
01:07:48 whether or not you have a latex-related condition.
01:07:50 Q. What are the occupations that have --
01:07:54 A. Well what I was focusing on there is whether
01:07:56 you're in a medical occupation or not, whether that
01:07:58 poses an increased risk of reporting a latex type
01:08:00 allergy.
01:08:02 Q. The question I'm asking is whether you have the
01:08:04 background to determine which are those risks from a
01:08:08 medical standpoint; in other words, to say I have
01:08:10 identified, based on my expertise and background,
01:08:14 that a particular exposure to a particular condition
01:08:18 is likely to cause diseases within the -- this
01:08:18 population?
01:08:22 A. Well, yeah, if you restrict it to medical, then
01:08:22 the answer is no.
01:08:36 Q. In other words -- okay. Have you published --
01:08:36 well, strike that.
01:08:38 Do you understand that epidemiologists and
01:08:42 medical doctors often make differential assessments
01:08:44 or differential diagnoses of causes of disease?
01:08:48 MR. McCARTER: Objection.
01:08:52 A. I can't give you a specific example, but it
01:08:52 wouldn't surprise me.
01:08:56 Q. Okay. Well let's say in a context in which

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01:09:00 someone's diagnosed with lung cancer, doctors and
01:09:04 epidemiologists may say, Well, based on that person's
01:09:08 life history, I believe that -- that lung cancer may
01:09:10 have been caused by smoking, may have been caused by
01:09:14 asbestos exposure. That's nothing that you do in
01:09:16 your practice -- in your business; correct?
01:09:16 A. Correct.
01:09:20 Q. And you do not, as I understand it, in your area
01:09:24 of expertise and your work for the -- as a Professor
01:09:30 at Human Resources and Industrial Relations at the
01:09:34 University of Minnesota, you do not make the
01:09:36 determination as to whether someone's particular
01:09:46 disease, let's say lung cancer, was caused by a
01:09:50 number of different risk factors; fair enough?
01:09:52 MR. McCARTER: Objection.
01:09:56 A. Yeah, in terms of medical determinations of
01:09:58 causation, I don't do that.
01:10:00 Q. Right. And you don't make the determination
01:10:02 then whether a particular exposure of a particular
01:10:04 individual may have been a confounding factor in
01:10:06 their development of disease; correct?
01:10:12 A. Again, from a medical perspective I don't.
01:10:18 Q. Or from an epidemiological perspective you
01:10:20 don't; fair enough?
01:10:22 A. Well again, I mean if you're talking about

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01:10:28 statistical analyses, I have looked at potential
01:10:34 confounders in terms of prevalence of different types
01:10:34 of conditions.
01:10:38 Q. Well but you don't make the judgment as to
01:10:40 whether a particular confounding factor was or was
01:10:44 not the cause of the disease in a person; correct?
01:10:44 A. In terms of causation.
01:10:46 Q. Yeah, okay.
01:10:48 A. Right, correct.
01:10:50 Q. Okay. You don't do that?
01:10:50 A. No.
01:10:52 Q. Okay. And which publication that you've
01:10:56 published has looked at the issue of confounding
01:11:02 variables in a medical or epidemiological study?
01:11:12 A. Well in terms of medical studies?
01:11:12 Q. Yeah.
01:11:18 A. I'm trying to think. I'm working on some papers
01:11:18 now that have yet to be published.
01:11:22 Q. I'm just talking about in your publications,
Doctor.
01:11:24 A. Yeah, that's what I'm looking at.
01:11:26 Q. If you can point out any -- any article that
01:11:28 you've published or book that you've published or
01:11:32 section of a book or government paper or even any of
01:11:34 your working papers that made -- that made a judgment

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01:11:38 or gave an opinion or an assessment of confounding
01:11:42 variables as it relates to diseases within
01:11:42 populations or in individuals?
01:11:46 A. Yeah, none of my work has -- has been published
01:11:48 yet.
01:11:52 Q. All right. So the answer is none in the
01:11:54 published literature in your CV; correct?
01:11:56 A. Yeah, the only --
01:11:58 Q. All right.
01:12:00 MR. McCARTER: Well let him --
01:12:00 MR. WITHEY: Sure.
01:12:04 A. With the qualification that I've looked at some
01:12:06 medical data in published research, but since it was
01:12:12 claim data it specifically may not be related to
01:12:12 disease.
01:12:16 Q. What are the papers that you -- that you have
01:12:20 published that deal with -- specifically with the
01:12:22 topic of healthcare economics?
01:12:30 A. Well if you restrict it to published there's a
01:12:32 paper with David Card called "Is Workers'
01:12:34 Compensation Covering Uninsured Medical Costs?"
01:12:36 Q. Where is that?
01:12:38 A. On page 4.
01:12:38 Q. Okay. Any others?
01:12:44 A. Again if you're restricting it to published, I

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01:12:44 think that's it.
01:12:54 Q. What was the basic conclusion of the "Monday
01:12:56 Effect", that people go into the doctors more on
01:12:56 Monday?
01:13:00 A. No, that was -- what we were interested in was
01:13:06 in this case in workers' compensation there is an
01:13:12 excess amount of claims for certain types of injuries
01:13:16 on -- on Mondays, and what we were interested in
01:13:20 assessing is whether or not there was any reason to
01:13:28 suspect that this "Monday Effect" was potentially due
01:13:32 to people who are uninsured, don't have health
01:13:36 insurance, whether or not they are trying to use the
01:13:38 workers' compensation to get health insurance for
01:13:40 those particular types of claims, those injuries.
01:13:44 Q. So you were trying to determine fraud basically?
01:13:44 A. Right.
01:13:44 Q. And what conclusions did you reach?
01:13:50 A. That -- I mean our conclusion was that we're not
01:13:54 saying there's no fraud, but this huge "Monday
01:13:56 Effect" that you'll observe didn't appear to be,
01:14:00 quote-unquote, "a fraud effect".
01:14:02 Q. What articles in the -- that you've published in
01:14:06 the literature deal with the topic of what are the
01:14:08 medical costs of smoking?
01:14:10 A. I haven't published anything on that.

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01:14:14 Q. What articles that you have published in the
01:14:16 medical literature -- or strike that.
01:14:18 What articles have you published in the
01:14:22 economics literature that have dealt with the topic
01:14:24 of the National Medical Expenditure Survey?
01:14:30 A. None of my published articles have used that
01:14:30 data.
01:14:32 Q. Prior to your work in the State Attorney
01:14:36 General's -- Strike that.
01:14:38 Prior to your work on behalf of the tobacco
01:14:40 industry in tobacco litigation, had you ever used the
01:14:42 National Medical Expenditure Survey?
01:14:46 A. I was aware of it, but I hadn't used it.
01:14:48 Q. Okay. And you certainly hadn't written about
01:14:50 it, correct?
01:14:54 A. No.
01:15:04 Q. Now what articles in the -- in the literature
01:15:06 that you've published dealt with the topic of what
01:15:08 diseases are caused by smoking?
01:15:12 A. None of my published articles have dealt with
01:15:12 that.
01:15:18 Q. What articles in the published literature in the
01:15:24 economic -- what do you call it -- econometric or
01:15:26 economics literature -- Strike that.
01:15:28 Could you point out any article or publication

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01:15:40 in your CV that addresses the issue of the lifetime
01:15:44 expenditures of -- medical expenditures of smokers?
01:15:48 A. No, I have not published anything.
01:15:50 Q. Do you have any -- have you published any
01:15:54 articles dealing with the impact of the tobacco
01:15:58 industry or smokers on consumption rates in the
01:16:00 United States?
01:16:02 A. No, I have not published on that topic.
01:16:16 Q. Do you have any research or publications dealing
01:16:20 with the concept of attributable risk as utilized by
01:16:24 the Surgeon General in Chapter 3 of its 1989 report?
01:16:30 A. With regard to smoking?
01:16:32 Q. Yeah.
01:16:32 A. No.
01:16:34 Q. Have you -- have you made any effort to
01:16:38 determine what the attributable risk of any suspected
01:16:40 risk factor is for any particular disease or any
01:16:44 particular grouping of diseases?
01:16:46 A. Attributable risk?
01:16:48 Q. Yeah.
01:16:50 A. Again, I have -- in terms of attributable risk,
01:16:54 I have looked at that -- what I've looked at is just
01:17:00 whether or not there -- with regard to lifetime issue
01:17:04 of increased prevalence among certain types of
01:17:04 workers.

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01:17:10 Q. Have you ever in any of your work applied the
01:17:16 attributable risk formula for any risk factor for any
diseases or groups of diseases?
01:17:20 A. In my published work or research?
01:17:22 Q. Yeah.
01:17:22 A. No.
01:17:24 Q. Do you know what the formula is?
01:17:24 A. Yes.
01:17:26 Q. What is it?
01:17:34 A. Formula is -- well, for single -- single risk
01:17:36 factor?
01:17:36 Q. Sure.
01:17:42 A. It's Prevalence times the Relative Risk minus 1
01:17:46 over 1 plus Prevalence times the Relative Risk minus
01:17:46 1.
01:17:50 Q. And you've never, ever applied either an R or a
01:17:52 P to that formula; is that correct?
01:17:52 MR. McCARTER: Objection.
01:17:56 Q. In other words, R being risk and P being
01:17:58 prevalence?
01:18:00 MR. McCARTER: Objection; vague.
01:18:02 Q. Have you ever done -- have you ever utilized
01:18:04 that formula in any of your work?
01:18:08 A. Prior to this. Or I mean not excluding the work
01:18:12 I've done in this and other sorts of cases?

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01:18:14 Q. Yes.
01:18:16 A. Not explicitly, no.
01:18:18 Q. Have you applied the risk in your opinions in
01:18:22 any of the reports in this case?
01:18:28 A. I think I may have calculated it in different
01:18:28 places.
01:18:34 Q. Where in Exhibits 2, 3 or 4 are they calculated,
01:18:40 again, using the attributable risk formula that you
01:18:40 just stated?
01:18:50 A. Well, it's used in various places either
01:18:58 directly or indirectly; for example, in Table 1 of
01:19:04 Exhibit 3 where we're doing the conduct analysis
01:19:18 there is implicitly in those calculations underlying
01:19:22 calculations that deal with attributable risk.
01:19:26 Q. Table 1 of Exhibit 3 is the Table called
01:19:28 Estimated Proportion of Total Smoking-Attributable
01:19:32 Expenditures caused by Alleged Misconduct: Harris
01:19:32 Method; is that correct?
01:19:32 A. Right.
01:19:38 Q. And so which -- which values that are reflected
01:19:42 on there did you use the attributable risk formula to
01:19:42 calculate?
01:19:46 A. I think the attributable risk formula underlies
01:19:46 all of them.
01:19:50 Q. And you made these calculations as opposed to

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01:19:50 Dr. Harris then?
01:19:56 A. I believe Dr. Harris -- I think I matched Dr.
01:20:00 Harris' estimates on the first column, but I think
01:20:04 those are originally Dr. Harris' estimates, the first
01:20:06 -- well not the first column of the year, but the
01:20:08 Dr. Harris' Low Estimate, that column.
01:20:08 Q. Yes.
01:20:12 A. I can't remember if I just typed those in from
01:20:14 him or calculated, but the other ones I certainly
01:20:14 calculated.
01:20:18 Q. Was that the first time then that you've ever
01:20:20 used or calculated the attributable risk formula?
01:20:22 A. No, I've done it in other cases.
01:20:24 Q. In other smoking cases.
01:20:24 A. Right.
01:20:26 Q. Tobacco cases?
01:20:26 A. Right.
01:20:28 Q. But as I understand your testimony, that other
01:20:30 than in the tobacco cases you've never used that
01:20:30 formula?
01:20:32 A. No.
01:20:36 MR. McCARTER: Do you want to take a
01:20:36 break?
01:20:36 MR. WITHEY: Sure.
01:20:38 MR. McCARTER: Is this a good time?

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01:20:38 MR. WITHEY: Yeah.

01:20:40 MR. McCARTER: Okay.

01:20:42 (Recess from 10:28 to 10:38 a.m.)

01:20:42 (McCall Deposition Exhibit 5 marked for identification during the recess.)

01:20:42 BY MR. WITHEY:

01:20:46 Q. Handing you what's been marked as Exhibit 5, Dr. McCall, is that the list of 32 documents relied upon by Brian P. McCall in the Iron Workers Local No. 17 Insurance Fund, et al. v. Philip Morris case?

01:20:58 A. Yes.

01:21:00 Q. And is that the -- we previously -- I asked you questions about this, what we called the list of 32. Is that the list we were referring to --

01:21:06 A. Yes.

01:21:10 Q. -- in those questions?

01:21:12 Now you were deposed by myself in the Northwest Laborers case a number of months ago; correct?

01:21:16 A. Yes.

01:21:18 Q. And you had an opportunity to read that deposition over and make -- make corrections and did so?

01:21:22 A. Yes.

01:21:24 Q. And I take it then you looked through the deposition carefully to make sure that everything was

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01:21:30 okay?
01:21:30 A. Yes.
01:21:34 Q. Right. And I'm not going to ask you all the
01:21:38 same questions I asked you in that deposition, but I
01:21:40 assume if I asked you the same questions, you'd give
01:21:40 the same answers; fair enough?
01:21:42 A. Maybe not verbatim, but --
01:21:44 Q. Sure.
01:21:44 A. Right.
01:21:48 Q. I just -- I want to save time so that we don't
01:21:50 have to re-ask all those questions, but if at the
01:21:52 time of trial I asked you a question and somehow it's
01:21:58 contradicted by what you said in the Northwest
01:22:00 Laborers case as opposed to this deposition, I want
01:22:02 to be able to use it. Fair enough?
01:22:02 A. Fair.
01:22:06 Q. Now I've asked you some questions about your --
01:22:18 about your publications, and I guess I just have a
01:22:20 few more and then we can move to another topic since
01:22:22 we had a break.
01:22:24 In any of your publications do you address the
01:22:40 topic of the American Cancer Society II or Cancer
01:22:40 Prevention Study II data?
01:22:42 A. In my published work?
01:22:44 Q. Yes.

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01:22:46 A. No.
01:22:50 Q. Was the first time you looked at that data for
01:22:52 the purpose of being an expert witness for the
01:22:52 tobacco industry?
01:22:52 A. Yes.
01:22:56 Q. Have you received from either William Wacker or
01:23:00 from -- or from anybody any of the computer disks
01:23:06 containing the CPS II data?
01:23:10 A. I have the CPS II data. I can't recall -- it
01:23:14 was given to me some law firm, I believe it was
01:23:16 Arnold & Porter, but I don't remember exactly.
01:23:20 Q. A law firm in the tobacco litigation; correct?
01:23:20 A. Correct.
01:23:22 Q. And when did you get the data?
01:23:30 A. It was several months ago. I can't remember
01:23:30 exactly when.
01:23:32 Q. What did you do with it?
01:23:44 A. What I've done thus far, I remember I did some
01:23:48 stuff in the Massachusetts AG litigation where I
01:23:50 submitted a report.
01:23:54 Q. What did you do?
01:24:02 A. What did I do? For that litigation I remember
01:24:10 calculating a little bit some of the relative risks
01:24:14 using a relative risk by age breakdown.
01:24:18 Q. Did you submit a report in that case?

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01:24:18 A. Yes.
01:24:22 Q. Did you -- were you deposed in that case?
01:24:32 A. No. I can't remember if it's a report that I
01:24:34 actually appended or if -- I had done a second
01:24:36 report, but I don't remember if I actually submitted
01:24:38 it, but I think I did. I'm pretty sure I did.
01:24:42 Everything ended around the time that report was
01:24:44 due. I'm unclear of the dates.
01:24:46 Q. "Everything" meaning the cases were settled?
01:24:48 A. Yeah.
01:25:00 Q. Well, in light of your testimony, I have a copy
01:25:02 of the -- Strike that.
01:25:06 You attached the State of Massachusetts v.
01:25:10 Philip Morris Expert Report of Brian P. McCall,
01:25:16 Ph.D., to your November 6th report in this case;
correct?
01:25:18 A. Correct.
01:25:20 Q. And I'm not going to have it marked unless we
01:25:24 need to, but is it your testimony that the -- your
01:25:28 analysis of the CPS II data that you received is
01:25:28 contained in this report?
01:25:32 A. I did two reports and I only gave you one, so I
01:25:34 can't remember which report unless you show it to me.
01:25:36 Q. We'll see if it's in the first one.
01:25:38 (Witness reviewing document.)

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01:25:54 A. Right, I think it's in the second one, because
01:25:58 as I recall now, having reviewed it, the first one
01:26:00 focused mainly on Harris, and then there was another
01:26:04 group of experts called the Cambridge Team which were
01:26:08 some professors from Harvard, I know that Professor
01:26:10 Cutler was one, and I remember doing that analysis
01:26:14 sort of in response or as a comment on their
01:26:16 analysis, and that was my second report.
01:26:18 Q. All right. Do you mind making a copy of that
01:26:22 available and we can mark it as exhibit --
01:26:26 What's the next one, Madam Court Reporter?
01:26:28 COURT REPORTER: 6.
01:26:30 Q. -- Exhibit 6 to this deposition.
01:26:32 MR. McCARTER: Do you still have that
01:26:32 report?
01:26:34 A. I didn't bring it with me, but I have it.
01:26:36 Q. No, I mean you have it in your office.
01:26:36 A. Oh, yeah. No, fine.
01:26:38 Q. Could you give it to counsel or send it to the
01:26:40 court reporter, we'll have it marked as an exhibit?
01:26:42 MR. McCARTER: You can send it to me and
I'll take care of it.
01:26:44 Q. Either one. If you could do that right away,
01:26:46 I'd appreciate it.
01:26:46 A. Yeah, I will.

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01:26:50 Q. You did not, however, utilize any analysis of
01:26:54 the CPS II data in any of your reports in the Ohio
01:26:56 Iron Workers case; is that correct?
01:26:58 A. I believe I did.
01:26:58 Q. Which report?
01:27:00 A. In the first report.
01:27:04 Q. All right. Please point that out.
01:27:14 A. Tables 1, 2, 3, 4, and that's at page 16 and
01:27:26 17. And I know there's a couple others. Table 13 on
01:27:30 page 22, and Table 14, page 23.
01:27:38 Q. Well is -- is this -- -- do these tables derive
01:27:44 from your re -- your analysis of the computer disk
01:27:48 containing the actual CPS II data or from looking at
01:27:52 what's contained within the Surgeon General's report?
01:27:56 A. No, I did this data analysis myself from the
01:27:56 original data.
01:28:26 Q. Is it stated in your report that you had
01:28:32 received a computer disk containing the CPS II data?
01:28:34 A. I don't recall saying that.
01:28:40 Q. You certainly relied upon that computer disk, as
01:28:40 you've testified; fair enough?
01:28:46 A. Correct, I used that data.
01:28:50 Q. Is it identified as any documents or any data
01:28:56 that you relied upon in -- anywhere in your -- any of
01:28:56 your reports?

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01:29:08 A. Well I think I -- where is this -- page 8 I say
01:29:12 that I'm using it. Using data from the American
01:29:14 Cancer Society's Cancer Prevention Survey II.
01:29:16 Q. Right. I'm asking a little bit different
01:29:20 question. You understand that the American Cancer
01:29:24 Society data was presented in the 1989 Surgeon
01:29:24 General's report?
01:29:24 A. No, I know that, yes.
01:29:28 MR. McCARTER: Objection. Objection there
01:29:30 on vagueness as to what you mean by "data". The --
01:29:32 the -- I'm sorry. Go ahead.
01:29:36 Q. In other words, numbers are contained within the
01:29:40 Surgeon General's report that reflect the Surgeon
01:29:44 General's use of the ACS II data; correct?
01:29:46 A. Right.
01:29:48 Q. And what I'm asking you is whether you
01:30:00 identified or provided to us the ACS II data --
01:30:00 Strike that. There's two questions there.
01:30:02 Did you identify in your paper the fact that you
01:30:04 had received a disk and that you were relying upon
01:30:04 that disk?
01:30:06 A. I think the only thing is I said that I used the
01:30:10 data. I don't know if I explicitly said I received a
01:30:10 disk.
01:30:16 Q. Okay. And in other words, you did not in, for

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01:30:18 instance, your list of documents relied upon, you did
01:30:22 not list that as a document that you relied upon;
01:30:22 correct?
01:30:24 A. Yeah, I believe in the documents that that one,
01:30:26 what was it, Exhibit --
01:30:32 MR. McCARTER: 5.
01:30:36 A. -- Exhibit 5, I just put all the published works
01:30:38 or, you know, papers that I relied upon.
01:30:40 Q. Well it says List of Documents; is that correct?
01:30:42 A. Well, I don't know. Maybe I don't count
01:30:44 computer data as a document, but --
01:30:46 Q. You don't. Okay.
01:30:48 A. Well I --
01:30:52 Q. At any rate, you did not identify the computer
01:30:52 disk on Exhibit 5; correct?
01:30:54 A. No, not on Exhibit 5.
01:31:02 Q. But as I understand your testimony, prior to
01:31:04 your being retained as an expert for the tobacco
01:31:08 industry, you had never seen that data and had not
01:31:12 referred to it in any publication of yours; correct?
01:31:12 A. Correct.
01:31:20 Q. Are you familiar with the National Health
Interview Survey?
01:31:20 A. Yes.
01:31:24 Q. Have you ever used that survey in any of your

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01:31:26 research?
01:31:26 A. Yes.
01:31:32 Q. Describe how you used it, in which research, and
01:31:32 if there's any publication?
01:31:38 A. I used it in my research regarding prevalence of
01:31:42 latex-related conditions. I used the 1985 through
01:31:46 1995 National Health Interview Survey.
01:31:48 Q. Did you consider this -- the data that you used
01:31:52 reliable from the NHIS?
01:31:58 A. Yes. For my purpose.
01:32:02 Q. And what portion of the data did you utilize for
01:32:06 your purposes in the latex research?
01:32:12 A. What I was doing again was looking at the
01:32:16 prevalence of latex conditions as reported by
01:32:22 individuals in the NHIS. I focused mainly on the
01:32:26 research in people who are employed rather than those
01:32:28 who are not employed, so it was employed individuals,
01:32:34 and then I used the data on reported conditions,
01:32:36 there's a condition file in the NHIS as well as a
01:32:42 demographic file, so I used those to estimate sort of
01:32:46 the determinants of whether or not you report a latex
01:32:48 related-condition, which generally speaking would be
01:32:56 asthma, specific ICD-9's within the asthma category,
01:33:02 allergic rhinitis, dermatitis, in particular contact
01:33:10 dermatitis, and anaphylactic shock.

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01:33:12 Q. Okay. So what demographic data did you get out
01:33:16 of NHIS, if you can recall?
01:33:20 A. Well, I try to control for it as much as
01:33:24 possible, by I recall, and I may be missing
01:33:26 something, but I -- so I was focusing on occupation.
01:33:28 I remember looking for -- controlling for occupation,
01:33:32 for the year of the survey, for regional effects,
01:33:36 whether you live in a city or not, age effects,
01:33:48 gender effects, schooling. I think that's -- that's
01:33:52 all I can remember off the top of my head. There may
01:33:54 have been -- industry effects, what industry you were
01:33:58 in. So I put in a number of factors in that.
01:34:02 Q. And were you looking at this latex-related
01:34:04 conditions issue nationally or locally or regionally?
01:34:10 A. The data of the NHIS is a national data set so
01:34:10 it was national.
01:34:14 Q. Was the research you were doing of national --
01:34:18 national in scope or were you looking at it from a
01:34:20 standpoint of a particular group of workers in a
01:34:22 particular locale?
01:34:22 A. It was national.
01:34:28 Q. Who did you perform this research on behalf of?
01:34:32 A. I had been supported by -- or it was a
01:34:34 consulting project by Allegiance.
01:34:34 Q. What is Allegiance?

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01:34:38 A. It's a healthcare firm.
01:34:40 Q. And that work has not been published?
01:34:42 A. No, not at this time. I'm still in the process
01:34:42 of writing it up.
01:34:48 Q. Is any of the work or the use of the NHIS data
01:34:52 that you used publicly available -- or would you make
01:34:52 it available to us?
01:34:54 A. Of the data?
01:34:56 MR. McCARTER: Objection.
01:34:56 MR. WITHEY: What's your objection?
01:34:58 MR. McCARTER: Are you making a request of
01:35:00 him. I don't understand what the --
01:35:02 MR. WITHEY: I don't want --
01:35:04 MR. McCARTER: Or is it the -- is it --
01:35:06 MR. WITHEY: If he's about to publish, I
01:35:10 don't want to violate the right of first publication.
01:35:10 MR. McCARTER: There also may be some type
of confidentiality involved.
01:35:12 MR. WITHEY: Absolutely.
MR. McCARTER: Yeah, I don't know that.
01:35:14 Q. I'm just asking, could you make it available to
01:35:16 us or is it confidential?
01:35:18 A. The raw data itself is not confidential.
01:35:20 Q. I'm not talking about the data, I'm talking
01:35:22 about your analysis of it?

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01:35:22 MR. McCARTER: I would just -- on the side here I would just advise you that you may want to
01:35:26 check with them before you give a fixed answer. I
01:35:28 don't know what the agreement is.
01:35:30 MR. WITHEY: But he may know.
01:35:30 MR. McCARTER: He may.
01:35:32 A. Thus far my data analysis is, you know, for
01:35:34 purposes of publication. I just haven't -- I have
01:35:36 some tables but I haven't written it up yet. I'm in
01:35:40 the process of writing it up.
01:35:42 Q. Oh.
01:35:48 A. I made a presentation at OSHA and, you know, I
01:35:48 had tables for that, but, you know, overheads, but
01:35:50 that's all I've done so far.
01:35:52 Q. Okay. Well then it is public then because
01:35:52 you've made a presentation to OSHA; right?
01:35:54 A. Right.
01:35:56 Q. Could you provide us with the tables and we'll
01:35:58 have them marked as Exhibit 8?
01:36:02 COURT REPORTER: 7.
01:36:04 A. Sure.
01:36:04 Q. Just the tables that you provided to OSHA?
01:36:06 A. Right.
01:36:06 Q. As they refer to the NHIS data?
01:36:10 A. I'll give you the overheads I used. That's, you
01:36:12

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01:36:12 know --
01:36:14 Q. Okay.
01:36:16 A. In hard --
01:36:16 Q. That's fine.
01:36:18 A. Hard copy.
01:36:18 Q. That's great. Thank you very much.
01:36:22 Other than that work, is there any work that
01:36:26 you've done, research or publications that utilizing
01:36:28 NHIS data?
01:36:32 A. No.
01:36:36 Q. You, however, consider it a reliable data
01:36:38 source; is that fair, I assume?
01:36:40 A. For the purposes I used it, yes.
01:36:48 Q. Now is there any research or publications that
01:36:50 you've done that refer to or utilize the
01:36:56 International Classification Disease-9 or any other
01:36:56 number?
01:37:02 A. Well again, the latex allergy data uses -- or
01:37:04 research uses that.
01:37:06 Q. Right, you've testified about the asthma numbers
01:37:06 and so on?
01:37:08 A. Right.
01:37:10 Q. Other than -- other than that, any others,
01:37:12 particularly any published research or articles?
01:37:20 A. No, most of the workers' comp. research I've

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01:37:24 done they have their own sort of classification
01:37:26 system. It's not ICD-9.
01:37:28 Q. Okay. So the answer is no?
01:37:28 A. No.
01:37:36 Q. Have you ever referred to or utilized any
01:37:42 research in the actuarial literature related to the
01:37:52 difference, either premiums or rates charged by
01:37:54 insurance companies as between smokers and
01:37:56 nonsmokers?
01:37:58 A. In my research?
01:38:00 Q. Yes.
01:38:00 A. No.
01:38:04 Q. The same would be true as to your publications,
01:38:04 I assume?
01:38:04 A. Right.
01:38:08 Q. You don't refer to that topic in any of your
01:38:08 publications; correct?
01:38:10 A. I don't refer to that.
01:38:30 Q. Now when you publish in the peer-reviewed
01:38:38 literature as contained within your Curriculum Vitae,
01:38:40 Exhibit 1, are there standards that you utilize in
01:38:46 submitting an -- an article or piece of research for
01:38:46 publication?
01:38:54 A. Well I want to make sure I've done as much as
01:39:00 possible to -- if it's an estimate -- I mean some of

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01:39:02 my papers are purely economic theories, that's a sort
01:39:08 of different type of paper, but in the empirical
01:39:12 papers is to convince myself, you know, that what
01:39:12 I've done is reasonable.
01:39:14 Q. Okay. Any other standards that you would
01:39:16 employ?
01:39:28 A. Well, I typically, you know, in choosing a
01:39:32 particular journal will think of the suitability of a
01:39:34 particular paper for a particular journal.
01:39:36 Q. Okay. Anything else you can think of?
01:39:46 A. I think once I've satisfied myself that, you
01:39:52 know, I in my opinion have done, you know, what I
01:39:56 think is a correct analysis, then I'll send it out,
01:40:00 but of course, you know, these are refereed journals
01:40:04 and referees make comments and many times the actual
01:40:06 publication incorporates those, the refereed
01:40:06 comments.
01:40:08 Q. Are you a peer-reviewer on any journals?
01:40:10 A. Yes.
01:40:10 Q. And are those listed in your CV?
01:40:12 A. Yes.
01:40:22 Q. Where are those listed? Page 7 and 8?
01:40:22 A. Yeah.
01:40:26 Q. Now as a peer-reviewer then you must read a lot
01:40:28 of articles in your -- in your field; correct?

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01:40:28 A. Correct.
01:40:32 Q. How many a year do you think you actually
01:40:38 conduct a peer-review process yourself on?
01:40:40 A. For other articles for journals?
01:40:42 Q. Yeah, for somebody else?
01:40:44 A. Probably in the last few years it's been about
01:40:46 15 a year.
01:40:50 Q. And you get these articles in the mail and you
01:40:52 read them and then you make comments, critiques and
01:40:54 discussion of them; is that correct?
01:40:56 A. Correct. And usually you also make an opinion
01:41:00 of whether you should publish it, reject it outright,
01:41:02 or maybe do some revisions.
01:41:04 Q. All right. And the next set of questions I'm
01:41:08 going to ask would be kind of a combination, if you
01:41:10 can do it, Dr. McCall, between what methodology --
01:41:14 strike that -- what you want to see in the articles
01:41:16 you public as well as what you want to see in the
01:41:20 articles that have been submitted to you as a
01:41:22 peer-reviewer. Are you following me? It's pretty
01:41:24 much the same standard, right?
01:41:24 A. Yeah, pretty much.
01:41:28 Q. In other words, you wouldn't hold yourself out
01:41:32 to a lesser standard that you would if you were
01:41:34 reviewing somebody else's papers and making a

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01:41:36 critique of it; fair enough?
01:41:40 A. Correct. I, again, read a paper, think of what
01:41:44 I believe would be a correct methodology, see whether
01:41:50 or not what your might consider completely rewriting
01:41:54 the paper and writing from scratch, whether they can,
01:41:56 you know, incorporate that in, and if so, then I
01:42:00 would, subject to, you know, how innovative the paper
01:42:02 is, recommend it or reject it or whatever.
01:42:06 Q. Very good. And I take it then in your field,
01:42:12 economics, econometrics, labor studies or labor
01:42:14 management, those are three areas you've identified
01:42:18 as having published in; is that correct?
01:42:24 A. Yeah, I mean it, broadly speaking, would be
01:42:28 econometrics, applied econometrics, labor economics,
01:42:30 industrial relations, and I've dabbled in other
01:42:36 fields, which might be more psychological.
01:42:38 Q. Okay. But at least on page 1 if Exhibit 1 you
01:42:42 identified the three research interests as applied
01:42:48 econometrics, econometric theory, and labor
01:42:48 economics?
01:42:50 A. Right. You said labor management, that's why I
didn't --
01:42:54 Q. Oh, I'm sorry. You're right. But anyway, your
01:42:54 degree is in economics?
01:42:54 A. Correct.

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01:43:02 Q. Now I assume that one of the things you'd look
01:43:06 at in determining whether a publication is fit for --
01:43:10 for inclusion within a peer-review is -- is the
01:43:12 methodology employed; correct?
01:43:12 A. Correct.
01:43:14 Q. And you would agree that it would be important
01:43:20 that in looking at a paper either that you would
01:43:24 submit it or review that methodologies that are
01:43:28 accepted methodologies are employed by the author?
01:43:30 MR. McCARTER: Objection, vague.
01:43:38 Q. I mean as distinct from a methodology which has
01:43:40 been determined to be fallacious.
01:43:42 A. Well when I read a paper I look at the
01:43:46 methodology that they actually employ, talking about
01:43:52 when I'm refereeing a paper, and then consider what I
01:43:56 believe to be the correct methodology, and then if,
01:44:00 you know, it's way off, then I would typically
01:44:04 recommend rejection, and if they can fix it up, if
01:44:06 it's close, I may recommend a revision.
01:44:08 Q. And I assume then that you would be familiar in
01:44:14 your field with the methodologies which are standard
01:44:20 or accepted, including, for instance, in econometric
01:44:26 theory or applied economics, there's some various
01:44:28 standards of -- standard methodology that's employed,
01:44:32 and you would be familiar with those; correct?

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01:44:36 A. Well I think it's very problem specific.
01:44:38 Q. In other words, whatever problem is being
01:44:40 addressed in the paper, you would want to look to see
01:44:44 if they've employed the proper methodology in solving
01:44:44 that problem?
01:44:50 A. Yeah, given their data and so on and so forth.
01:44:52 Q. And you would look to see if they had cited
01:44:54 references for any either particular methodology they
01:44:56 employed or statement they make that could be
01:45:00 supported by references; fair enough?
01:45:06 A. Well it depends on what they're doing. I mean
01:45:12 if they -- they're developing methodologies, they
01:45:14 can't reference it.
01:45:16 Q. Sure, if it's original work; fair enough?
01:45:16 A. Yeah.
01:45:20 Q. But you'd look to see -- you looked at their
01:45:24 citations of references in reviewing an article and
01:45:26 in submitting articles; fair enough?
01:45:30 A. Well my major concern is whether they've done
01:45:32 what I believe is a good job. I might -- I rarely
01:45:40 comment on references unless they've made a claim to
01:45:44 do something new which actually isn't new and
01:45:48 somebody else has done it, or in reference to there
01:45:52 are different methodologies that they haven't used,
01:45:58 but I will, you know, rarely, say, you know, you're

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01:46:00 missing so and so references. Maybe sometimes I
01:46:02 will, but it's not a big concern.
01:46:04 Q. Well, for instance, if you saw a paper that said
01:46:06 the -- on labor economics that said that the wage
01:46:10 rate in the United States had -- had increased by 25
01:46:18 percent between the years 1950 and 1995 and without
01:46:20 citation, you would say -- would you say, Cite,
01:46:26 question mark? What's the source of this data? Is
01:46:26 that something you might do?
01:46:30 MR. McCARTER: Objection.
01:46:34 A. If -- well, I mean if they're just pulling that
01:46:36 number off rather than saying we calculated this
01:46:36 number and --
01:46:38 Q. Yes.
01:46:40 A. -- this is how we did it?
01:46:40 Q. Yes.
01:46:44 A. I probably would wonder how they got it, yes.
01:46:46 Q. Okay. In other words, if they seem to be
01:46:50 stating facts or certain events occurred or certain
01:46:56 trends exist that they themselves don't develop, as
01:47:00 opposed to referring to some other body of work,
01:47:04 you'd want to know what that body of work is that
01:47:06 they're referring to; correct?
01:47:06 MR. McCARTER: Objection; vague.
01:47:10 A. Well again, in my reading of a paper I would not

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01:47:16 find that -- I'm very time constrained so I make what
01:47:18 I consider crucial comments and keep my referee
01:47:18 report short.
01:47:20 Q. Let me ask you this: --
01:47:22 A. An editor would worry about that more than me.
01:47:26 Q. Okay. But let's say if you're submitting a
01:47:26 paper.
01:47:28 A. If I was submitting a paper, I would worry about
01:47:28 that.
01:47:30 Q. Yes. You'd want to cite references if you make
01:47:34 a statement that average wage rate of an industrial
01:47:38 worker in the United States has declined, gone up, or
01:47:40 stayed the same, because you know that that's nothing
01:47:44 you've necessarily done original work on as opposed
01:47:48 to relying upon other authoritative sources. In that
01:47:50 circumstance when you rely upon other authoritative
01:47:52 sources you wanted to cite the sources; fair enough?
01:47:54 MR. McCARTER: Objection; vague.
01:47:56 A. Again I try to cite as much as possible, and
01:48:00 typically if I don't, some referee or editor will
01:48:00 probably point it out.
01:48:04 Q. Will point it out and ask you, Well, where do
01:48:08 you get this? and you'd provide a cite to them if
01:48:08 they ask you to do that?
01:48:10 A. Right.

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01:48:12 Q. Is it's fair to state that when describing the
01:48:16 methodologies used in order to arrive at data tables
01:48:20 or charts, you would -- you would note any
01:48:24 limitations on that method if there's been, you know,
01:48:28 critiques of the method or weaknesses of the method
01:48:32 pointed out, that would be something you'd want to
01:48:34 put in the document, the paper its; fair enough?
01:48:42 A. I think, you know, for any method you use, you
01:48:44 know, you'd want to make some list of I think
01:48:48 potential limitations under -- or at least under what
01:48:50 circumstances, you know, the method is valid.
01:48:54 Q. Okay. And of course that would take an
01:48:58 understanding of if there are weaknesses of the
01:49:00 method you'd have to -- if you were employing a
01:49:04 method or if you were reviewing a method someone else
01:49:06 is employing, you'd have to have some knowledge then
01:49:10 of whether the method has limitations, should be used
01:49:12 in certain circumstances but not in others, for
01:49:14 example; fair enough?
01:49:16 A. Well, you would -- you know, if it's a
01:49:18 statistical methodology you would have to know the
01:49:22 assumption under which the statistical methodology is
01:49:26 valid and whether or not the problem, if it's an
01:49:28 implied problem, whether or not this problem
01:49:30 satisfies those or at least closely approximates

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01:49:30 them.
01:49:36 Q. And is the report that you submitted on November
01:49:38 6th a report that you would in its present form
01:49:46 submit for peer-review? Does it meet the standards
01:49:48 that you would set or that peer-reviewed publications
01:49:52 would set for publication in the way you've just
01:49:54 described it?
01:49:54 MR. McCARTER: Objection.
01:49:58 A. Well, it's not a, quote-unquote, "research
01:50:08 article," but it's more a -- I would say in a sense
01:50:10 more like a referee report.
01:50:12 Q. Well, I'm asking whether you believe that this
01:50:16 report you have written on November 6th -- Strike
that.
01:50:20 Do you believe that in writing the report you
01:50:22 submitted on November 6th you have complied with all
01:50:26 of the set of standards or criteria that you would
01:50:30 employ in submitting an article to a refereed journal
01:50:34 or in reviewing an article submitted to you for
01:50:34 refereeing?
01:50:40 A. I think it -- like I said, it's -- it's -- it's
01:50:44 more a comment on -- on somebody else's paper or
01:50:50 research, you know, speaking in general terms, and
01:50:58 it's not what I would consider some paper type -- I
01:51:02 mean, like I said before, in my vision I consider it

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01:51:04 more like a referee report, so what I'm doing is I'm
01:51:10 looking at somebody else's, quote-unquote, "research"
01:51:12 and then making comments on whether or not the
01:51:14 methodology is correct or not.
01:51:16 Q. Well those -- those kinds of critiques of other
01:51:20 people's work get published from time to time;
correct?
01:51:22 A. From time to time, yes.
01:51:24 Q. And I'm asking the question whether the paper
01:51:28 you've written does or does not meet the standards
01:51:32 that you've just described in submitting a paper for
01:51:32 publication?
01:51:40 A. Well, again I mean it certainly could form a
01:51:44 basis for something that would entail a comment.
01:51:48 Q. I'm not asking whether it forms a basis.
01:51:50 A. If that was -- if their paper in fact was
01:51:52 published. I'm really commenting on somebody else's
01:51:54 work rather than --
01:51:56 Q. I'm just asking whether you believe the report
01:51:58 you wrote, and maybe the answer is no because it's
01:52:00 not meant for that purpose, but I'm just asking:
01:52:04 Does the report you wrote on November 1st comply with
01:52:06 the standards of publication that you've just
01:52:10 described regarding methodology, citing references
01:52:14 and citing or referring to limitations on

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01:52:20 methodologies or data? Does it meet those standards?
01:52:26 A. Well, like I said, you know, when I was writing
01:52:30 this report I viewed it more in my own frame of mind
01:52:34 as something that I would consider a detailed referee
01:52:40 report where I would make comments on the
01:52:44 appropriateness of the methodology. I had no, you
01:52:44 know --
01:52:48 Q. Therefore it does or doesn't meet these
01:52:48 standards?
01:52:50 MR. McCARTER: Let him finish.
01:52:50 MR. WITHEY: Oh, I'm sorry.
01:52:52 MR. McCARTER: Sorry.
01:52:54 A. I mean I didn't envision myself ever publishing
01:52:58 this, so there might have been some things I would
01:53:00 have done a little different in terms of, you know,
01:53:02 formatting and other things if I were to consider
01:53:06 this -- again I wouldn't necessarily call it original
01:53:10 research, this is just really a comment on other
01:53:14 persons, but I never envisioned it being sent out for
01:53:18 publication, although the -- the comments I have are
01:53:24 -- are in my opinion valid for this particular work
01:53:28 that the -- the Plaintiffs' experts have done, but
01:53:30 again, I didn't intend to ever publish it.
01:53:34 Q. So therefore it doesn't meet the standards that
01:53:36 you've set, that you've just described, because it

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01:53:38 wasn't meant to be published?
01:53:42 A. It meets the standards in my mind for commenting
01:53:48 on research, but like you said, you know, I might
01:53:50 have done references slightly different or whatever
01:53:54 if I thought this was to be published, and I would
01:53:58 never consider this for publication other than
01:54:00 something, you know, more like a comment.
01:54:06 Q. Well let's take a look at it. Did you cite in
01:54:10 any of your reports, November 6th, or all of the
01:54:14 reports, did you cite any understanding you had of
01:54:18 any of the limitations of the National Medical
01:54:20 Expenditure Survey data?
01:54:28 A. Again, I was in my report focusing on one
01:54:34 attribute of the Plaintiffs' model, the use of the
01:54:34 mortality ratio approach, rather than -- and applying
01:54:40 that to calculating relative risk for expenditure, so
01:54:42 what I'm doing is in a sense what I viewed as a
01:54:48 sensitivity analysis and, you know, if I had
01:54:50 submitted this as a referee report I would, you know,
01:54:58 not necessarily go into all the detail on the data
01:55:00 that I used but just say using the data on
01:55:04 expenditures called the NMES, if you look at
01:55:08 expenditure data instead of mortality data, you get
01:55:10 different results.
01:55:10 MR. WITHEY: Move to strike as

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01:55:12 nonresponsive.
01:55:12 Could you have the question read to the
01:55:14 witness, please.
01:56:14 (The record was read by the reporter.)
01:56:16 (Witness reviewing document.)
01:56:18 A. I believe I just -- I'm trying to see what I
01:56:22 said about the NMES report, the first report.
01:56:24 Q. Take your time, take a look.
01:56:26 (Witness reviewing document.)
01:56:36 A. I believe I just state that when I'm doing the
01:56:40 sensitivity analysis that I'm using the NMES.
01:56:44 Q. Right. You don't state the limitations of that
01:56:48 -- of that -- that data set, the NMES data set, do
you?
01:56:54 A. Not in this report, I don't, no. I don't think
01:56:56 I did in the other ones either.
01:57:00 Q. Well, let me ask you this: Do you have any
01:57:04 understanding of the limitations of the NMES data
01:57:04 set?
01:57:06 MR. McCARTER: Objection; vague.
01:57:12 A. I guess, yeah, you'd have to tell me what you
01:57:16 refer to or what you mean. Relative to what?
01:57:24 Q. Well, what do you know about how the NMES data
01:57:24 was generated?
01:57:32 A. Well it was a national sample, random sample to

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01:57:36 some extent, although there's population weights in
01:57:48 it, so it's a weighted random sample, and I know that
01:57:54 in various points, as we spoke before, there was some
01:57:56 imputations made of in particular medical
01:58:04 expenditures, medical expenditures where they had a
01:58:12 survey -- medical provider survey which attempted to
01:58:16 get data from the medical provider on expenditures,
01:58:18 although again they had missing values, and there
01:58:26 were some imputations done for -- for those
01:58:34 observations that had missing values. Again the
01:58:38 limitations in a sense always depend upon, you know,
01:58:40 what aspect, you know, what particular problem you're
01:58:40 looking at.
01:58:46 Q. Would you rely upon the NMES data set in any of
01:58:46 the tables?
01:58:52 A. Yeah, I -- for using -- calculating, you know,
01:59:00 some -- or analyzing the effect on the estimates of
01:59:10 using mortality versus expenditure data for relative
01:59:14 risks and also looking at the effect of potential
01:59:18 confounding, I used the NMES data, and I think I have
01:59:22 some summary statistics using the NMES data.
01:59:24 Q. Why don't we do this: If you could identify
01:59:30 each page and table in any of the reports, Exhibit 1,
01:59:38 2, or 3 -- excuse me -- 2, 3, or 4 that utilizes the
01:59:40 NMES data set.

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01:59:42 A. Okay.
01:59:44 Q. Just list those, going through each report.
01:59:46 MR. McCARTER: I think most of them
01:59:48 actually refer to NMES, have it right on the page.
01:59:50 MR. WITHEY: Yeah, I know, but I want him
01:59:54 to -- all right. Well, we could shorten that.
01:59:58 Q. Where you utilize -- Strike that.
02:00:02 In your reports, Exhibits 2, 3 and 4, where you
02:00:06 rely upon the NMES data set, is it set forth in the
02:00:06 report itself?
02:00:08 A. I believe so, yes.
02:00:10 Q. So all the -- rather than going through the
02:00:12 exercise of having you identify it, every time NMES
02:00:16 is referred to, that's when you are using the NMES
02:00:18 data set, pretty much; fair enough?
02:00:40 A. Let's see if I did it here. Tables 3 and 4 of
02:00:42 my third -- I guess it's Exhibit 4, --
02:00:44 Q. Yes.
02:00:50 A. -- They probably refer to NMES in the text but
02:00:52 not actually in the table. Those --
02:00:54 Q. Right. That's what I'm trying to find out. Is
02:00:58 there any tables, and take your time to look through
02:01:00 it, that you've generated or any discussion you
02:01:04 generated utilizing the NMES data set that is not
02:01:06 referred to --

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02:01:06 A. On the table itself?
02:01:10 Q. Yes. Table 3 of Exhibit 4?
02:01:12 A. Table 3 and 4.
02:01:16 Q. Okay. Any others that you can --
02:01:28 A. And I guess the same would be for Tables 16 and
02:01:32 17 of my first report; I guess that's Exhibit 2.
02:01:34 Q. Correct.
02:01:48 A. And I think that's it.
02:02:20 Q. Okay. Now let's -- since you -- is the damage
02:02:24 model developed by John Dement or utilized by John
02:02:28 Dement and Stan Roberts based upon NMES?
02:02:32 A. No, they take a mortality ratio approach which
02:02:36 uses data I think originally from the American Cancer
02:02:42 Society's CPS II, although I don't know that they --
02:02:44 I think they took it from the Surgeon General's
02:02:52 tables, but that's where the data is coming from.
02:02:56 Q. Now have you read any articles, publications, or
02:03:02 reports, including reports of expert witnesses, that
02:03:06 -- that do discuss the limitations of the NMES data
02:03:08 set?
02:03:16 A. Well, I think, as we talked before, I can't
02:03:20 remember if I read it or heard it or what, but Dr.
02:03:24 Rubin had made mention of the fact that the data
02:03:26 wasn't multiply imputed.
02:03:30 Q. Okay. That was for the -- what's known as the

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02:03:30 missing data problem?
02:03:30 A. Right.
02:03:34 Q. And what is your understanding of the missing
02:03:34 data problem with NMES?
02:03:40 A. Well, I know that for the medical expenditure
02:03:46 data, I believe this is it, is that -- that if they
02:03:50 couldn't get data from the individual or the
02:03:56 provider, then they used an imputation method which
02:04:00 wasn't multiple imputation to impute the -- the
02:04:00 value.
02:04:04 Q. What were the dimensions of the missing data
02:04:06 problem in NMES?
02:04:08 A. You mean which data were missing?
02:04:12 Q. And how much of it was missing? Correct.
02:04:14 A. Well, in any data set there's, you know --
02:04:18 Q. I'm not asking in any data set, just NMES?
02:04:20 A. Oh, in NMES, okay. I'm sure there were -- I
02:04:24 can't remember each variable that -- and the number
02:04:26 of missing values, but I'm sure there were many
02:04:28 variables that had missing values, and I think that
02:04:32 NMES handled different variables differently.
02:04:34 Q. They imputed values for missing data in various
02:04:36 instances?
02:04:36 A. In some cases, yes.
02:04:38 Q. And did you adopt those imputations or did you

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02:04:40 perform your own imputations?
02:04:44 A. In the sensitivity analysis that I did on the
02:04:46 medical expenditure data, I think for the medical
02:04:50 expenditure data, the dependent variable I used the
02:04:58 -- the data that had the imputed values from NMES
02:04:58 itself.
02:05:02 Q. Okay. Was there any other missing data that you
02:05:10 used imputation of data that was not performed by
02:05:10 NMES?
02:05:14 A. I didn't do any imputations myself.
02:05:14 Q. That's what I'm really asking.
02:05:18 A. Well, sometimes though I mean, you know, there
02:05:20 may be cases where one of the independent variables
02:05:26 had a missing value, and instead of imputing it I may
02:05:26 have not included it.
02:05:30 Q. In any of your publications that you've
02:05:34 published in the literature have you addressed the
02:05:36 topic of imputation of missing data?
02:05:46 A. Well, in the one paper it wasn't necessarily IN
02:05:50 -- I mean it's close to imputation, it's a missing
02:05:52 data type problem. In the paper I did on medical
02:05:56 expenditures related to workers' comp., you know, the
02:05:58 "Monday Effect" paper, --
02:05:58 Q. Okay.
02:06:00 A. -- we had some imputation type problem that we

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02:06:02 had to handle.
02:06:02 Q. What was the missing data there?
02:06:08 A. What the problem was there is that in the claims
02:06:14 data, workers' comp. claims data they did not know
02:06:18 whether or not the individual was covered by private
02:06:22 health insurance, and so what we did was what we
02:06:26 called two sample approach; we used a secondary
02:06:30 sample to estimate that probability and used that
02:06:32 probability in the -- in the claims data.
02:06:34 Q. I tell you what, I could probably get it, but
02:06:36 you have a copy of that paper in your office
02:06:36 somewhere?
02:06:40 A. Yeah, I can send you a copy if you'd like.
02:06:42 Q. All right. And we'll have that marked as
02:06:46 Exhibit 8. I could go on --
02:06:46 Off the record.
02:06:46 (Comments off the record.)
02:06:52 Q. But by secondary source of data what are you
02:06:54 referring to in that circumstance?
02:06:58 A. Well what we did is we used an auxiliary data
02:07:00 set, in this case it was the Current Population
02:07:08 Survey, and estimated essentially a model of the
02:07:12 probability of having health insurance for the
02:07:14 function of various characteristics, and then used
02:07:18 that model to impute the value, the probability for

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02:07:20 the individuals in the claim data.
02:07:22 Q. How many individuals were in the claim data in
02:07:22 that case?
02:07:26 A. In the neighborhood of 30,000.
02:07:30 Q. And how many individuals were in the secondary
02:07:30 source population?
02:07:34 A. About the same neighborhood.
02:07:36 Q. Different people though; correct?
02:07:38 A. Yeah, yeah, the people were different.
02:07:44 Q. And you didn't decide to do a survey of the
02:07:46 30,000 that were in the subject population to
02:07:50 determine whether they had insurance or not then in
02:07:50 that circumstance; correct?
02:07:54 A. Well, yeah. We got the data from workers'
02:07:58 comp., and due to privacy restrictions I don't think
02:08:00 we were allowed to identify the individuals.
02:08:10 Q. Okay. Privacy in the sense that it was dealing
02:08:12 with their medical care and medical utilization,
02:08:14 healthcare utilization; correct?
02:08:18 A. Yeah, I mean we -- we never -- yeah, I mean
02:08:22 there was -- there's state regulations concerning
02:08:24 state data on privacy.
02:08:26 Q. And so what you did is used the -- really what
02:08:30 the best available data of the presence or lack of
02:08:34 presence or status of insurance in another population

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02:08:36 and applied it to the subject population; correct?
02:08:40 A. Right, we -- we did what we thought was correct.
02:08:44 Q. All right. And of course the decision to do
02:08:50 that required some judgment on your part within the
02:08:54 expertise that you had; fair enough?
02:08:54 A. Right.
02:09:04 Q. Now is there any other limitation on utilizing
02:09:06 the NMES data other than what you've already
02:09:08 testified to that you're aware of?
02:09:10 MR. McCARTER: Objection; vague.
02:09:16 A. Again, it really -- a lot of times it depends
02:09:18 on, you know, the problem that you're addressing. I
02:09:22 mean limitations of a data set sometimes are a
02:09:28 function of the question you're using the data --
02:09:32 what you're potentially analyzing. I wouldn't use
02:09:34 the NMES for certain questions potentially and maybe
02:09:38 for others, so it's more, you know, kind of problem
02:09:38 specific.
02:09:42 Q. All right. Well have you read -- you've --
02:09:44 you've discussed the fact that you had heard
02:09:48 reference to the missing data problem and the need
02:09:52 for imputation and perhaps multiple imputation. Have
02:09:56 you read any documents or any articles that are
02:09:58 critical of NMES in any respect?
02:10:06 A. Other than the ones I may have looked at some

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02:10:10 testimony documents with Professor Rubin, I can't --
02:10:10 I can't recall.
02:10:14 Q. Who was involved in the NMES study? Do you know
02:10:18 the authors, any of the authors?
02:10:22 A. Not off the top of my head.
02:10:26 Q. Professor Rubin testified about a Nancy Math --
02:10:28 Mathiowetz (ph.). Have you ever heard of her?
02:10:30 A. I've heard that name mentioned.
02:10:34 Q. How mentioned? In discussions with counsel?
02:10:36 A. I believe, yeah, there was some mention of her
02:10:40 name in one of the cases, state cases, state AG case.
02:10:44 Q. She was an expert witness in one of those cases
02:10:44 then?
02:10:46 A. I think so.
02:10:48 Q. Okay. And do you know what the subject matter
02:10:50 of her testimony was?
02:10:56 A. Not exactly. I never looked at her testimony.
02:10:58 Q. Okay. Were you aware that in the state AG cases
02:11:02 that the Plaintiffs, the State Attorney General's
02:11:08 experts, the Millers, Vince and Len Miller, the
02:11:16 Cambridge Group, someone named Harrison I think were
02:11:20 utilizing NMES data to generate the damage estimates
02:11:22 for the Medicaid population?
02:11:30 A. I think the Cambridge Group used the NHIS, not
02:11:32 NMES, but the other two used NMES.

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02:11:36 Q. So you knew that there were expert reports
02:11:40 submitted in AG cases that claim by using the NMES
02:11:42 data they believed that they had proven that the
02:11:44 state Medicaid program had made expenditures for
02:11:48 smokers above that -- expenditures made for
02:11:50 nonsmokers, or generally to that effect?
02:11:52 A. In general.
02:11:54 Q. And you understood then that there were defense
02:11:58 experts, including Nancy Mathiowetz (ph.), that
02:12:02 presented critiques of the model utilized by the
02:12:04 Plaintiffs' experts, including their reliance upon
02:12:06 NMES; correct?
02:12:06 MR. McCARTER: Objection.
02:12:08 A. Again, I heard that name mentioned and I heard
02:12:12 it related to NMES, and I also I think heard some
02:12:16 mention that -- I can't remember which case, it might
02:12:20 have been Oklahoma -- that she was in one of the
02:12:24 cases, but I don't know exactly what she was talking
02:12:24 about.
02:12:28 Q. Okay. And the reason I'm raising it is
02:12:30 Professor Rubin made that comment and stated that in
02:12:34 his deposition just two days ago so -- and so that's
02:12:36 the origins of that name. And -- but she was not the
02:12:42 only expert that -- of the Defendant tobacco industry
02:12:44 that offered criticisms of the utilization of NMES

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02:12:46 data; is that your understanding?

02:12:52 MR. McCARTER: Objection.

02:12:52 A. Of the data itself?

02:12:54 Q. Yes.

02:13:02 A. Again, you know, other than Rubin, I --

02:13:02 Q. Yeah.

02:13:08 A. -- don't recall, or wasn't given any information about any other people.

02:13:14 Q. Did you discuss Nancy Mathiowetz (ph.) yesterday in your discussions with Mr. McCarter or with Peter Biersteker?

02:13:20 A. I think the name came up.

02:13:22 Q. And in what context?

02:13:24 A. Whether I had heard that name, and I remembered saying not that name specifically but that it was mentioned -- I remember some mention of this person more than a name, and then I guess they probably mentioned the name before but I completely forgot about it, but I remember this, you know, expert being mentioned some time back with regard to the Oklahoma case.

02:13:52 Q. And this name may have been mentioned in yesterday's conversation in which you were talking about preparing for this deposition; correct?

02:13:58 A. I think it may have come up, yes.

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02:14:02 Q. And was it -- did it come up in the context of
02:14:04 what had happened with Professor Rubin's deposition?
02:14:12 A. I think all -- I can't recall how it came up.
02:14:16 All I know is it was mentioned whether I remembered
02:14:16 that.
02:14:20 Q. Okay. Did you -- have you had a chance to read
02:14:22 Professor Rubin's deposition?
02:14:22 A. No.
02:14:26 Q. And did it come up in the context of whether I
02:14:30 might ask you about Nancy Mathiowetz (ph.)?
02:14:36 A. I think we were discussing the NMES, and we were
02:14:40 in a general manner discussing, you know, what I
02:14:44 should be aware of in preparation, and it came up in
02:14:46 some context there.
02:14:48 Q. Okay. And you understand that Nan -- do you
02:14:52 understand that Nancy Mathiowetz (ph.) according to
02:14:54 Professor Rubin was involved in some way in the
02:15:02 design and formulation of the NMES data?
02:15:04 A. Well I don't understand it relative to Professor
02:15:04 Rubin, --
02:15:04 Q. Right.
02:15:06 A. -- but I understood --
02:15:06 Q. But you understood --
02:15:06 A. That name was assigned -- associated with
02:15:10 somebody who had something to do with NMES.

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02:15:14 Q. Have you ever reviewed any of the design
02:15:20 questionnaires, survey design of NMES?
02:15:24 A. A long time ago when I first started on some of
02:15:30 these cases I went through a lot of the documentation
02:15:32 on NMES, some of which may have had questionnaire
02:15:34 type documentation, but I don't remember much.
02:15:36 Q. Who did you get the documents -- those documents
02:15:38 from?
02:15:40 A. Well again, it was all on this CD Rom. There's
02:15:46 a publicly available data set, I think is it the
02:15:52 NCHS, something like that, puts it out, and, you
02:15:58 know, on a CD Rom, it's not only all the computer
02:16:00 files but a lot of documentation, and I remember
02:16:04 looking through that documentation at various points.
02:16:06 Q. So, for instance, I assume in that documentation
02:16:08 on the CD Rom was a kind of a template sample form of
02:16:12 questionnaires that had been utilized in the -- in
02:16:12 the study?
02:16:16 A. There may have been. I'm not 100 percent sure.
02:16:18 Q. Were -- was the -- was there any documents on
02:16:22 the CD Rom that identified the design of the study
02:16:22 itself?
02:16:24 A. I believe -- you know, I don't know how much
02:16:30 detail it provided of the design. I know there's at
02:16:30 least an overview of the design.

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02:16:34 Q. Okay. So you were able to look at that and to
02:16:36 determine what the design of the study was, at least
02:16:36 at that time?
02:16:40 A. Right, I looked at it.
02:16:44 Q. And by the way, do you still have that CD Rom?
02:16:44 A. Yes.
02:16:48 Q. I assume that that's one of the -- one of the
02:16:52 files or disks that you've relied upon in your -- in
02:16:54 your use of NMES in this case; fair enough?
02:16:54 A. Correct.
02:16:58 MR. McCARTER: I think this issue came up
02:17:00 in the Northwest Laborers deposition about that, and
02:17:04 you asked if we had produced it then, and I think
02:17:06 it's publicly available. I don't know what the
02:17:10 stipulation is between the parties as to providing
02:17:10 each other with that type of material.
02:17:12 MR. WITHEY: I thought we were going to get
02:17:14 it, but that -- I don't recall specifically.
02:17:16 MR. McCARTER: Okay. I don't know.
02:17:18 MR. WITHEY: We've never gotten it. Do you
02:17:20 mind making -- can you make a copy of that and send
02:17:22 it to us through counsel?
02:17:24 THE WITNESS: Well maybe if I could send it
02:17:26 to counsel and they can make a copy of it.
02:17:28 MR. McCARTER: Yeah, it's a big disk. Let

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02:17:30 me talk to my colleagues and figure out what the type
02:17:32 of arrangement is.
02:17:40 MR. WITHEY: Okay. Fair enough.
02:17:42 Q. By the way, have you ever reviewed any of the
02:17:46 reports of the authors or researchers of NMES as it
02:17:48 relates to the limitations on the survey, the data
02:17:50 collection?
02:18:00 A. Not at this time, I can't recall any.
02:18:02 Q. Are you aware of the predecessor studies to the
02:18:06 NMES? NMES was in 1987; is that correct?
02:18:10 A. That's when the survey was administered, yes.
02:18:12 Q. Right, that's what I meant. Are you aware of
02:18:14 the predecessor studies?
02:18:22 A. Other than, you know, -- I guess I don't know
02:18:26 how you define "predecessors". There's been other
02:18:32 studies of similar data. I think. Is that what you
02:18:34 referred to as --
02:18:34 Q. Yes.
02:18:38 A. I mean there's been the NHIS around for many,
02:18:40 many years, which is somewhat similar except it
02:18:44 doesn't have the expenditure part, and that's one of
02:18:46 the reasons why. I mean there's some acting that,
02:18:48 you know, every ten years or so they're going to
02:18:52 collect expenditure data. I can't recall when they
02:18:52 started that.

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02:18:56 Q. Do you recall the 1977 National Medical Care
02:19:00 Expenditure Survey, NMCES? Are you familiar with
02:19:00 that?
02:19:02 A. I don't think I've ever looked at it.
02:19:08 Q. How about the 1980 National Medical Care
02:19:08 Utilization Expenditure Survey, are you familiar with
02:19:08 that?
02:19:12 A. No, I haven't looked at it.
02:19:24 Q. Was the -- was assessing the relationship
02:19:30 between healthcare expenditures and smoking an
02:19:34 analytical objective of the work conducted by NMES?
02:19:36 MR. McCARTER: Objection; vague.
02:19:38 A. The relationship?
02:19:40 Q. Yeah.
02:19:44 A. All I know is -- I'm not aware of it. All I
02:19:48 know is they collected data on medical expenditures
02:19:56 and they collected data on smoking incidence. I
02:19:58 don't know what their objectives were.
02:20:00 Q. Do you know how many questions on the smoking
02:20:02 were asked?
02:20:04 A. Not exactly.
02:20:06 Q. Do you know how many questions were asked in
02:20:06 total?
02:20:08 A. In total?
02:20:08 Q. On the questionnaire, yeah.

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02:20:14 A. I know that there are thousands of variables.
02:20:18 Assuming that there are at least several hundred
02:20:22 questions, probably thousands of questions, but I
02:20:24 don't know to the extent of the smoking questions. I
02:20:28 could take a guesstimate. I mean I know it wasn't
02:20:28 like --
02:20:28 Q. Go ahead.
02:20:30 A. It was less -- probably less than ten.
02:20:34 Q. Was -- could there have been as few as five?
02:20:36 A. Could have been, yeah.
02:20:42 Q. Okay. And you understand that in --
02:20:44 Have you yourself ever conducted a survey or
02:20:44 questionnaire?
02:20:46 A. Directly.
02:20:50 Q. Well either directly where you're asking the
02:20:52 questions or under your direction and control?
02:21:00 A. Well I mean that's part of the -- in my class
02:21:04 that I teach on quantitative methods they all conduct
02:21:08 surveys, and so I guide them in that, although
02:21:10 they're limited in certainly their resources, but I
02:21:16 haven't done any of my own -- I'm trying to think --
02:21:18 for -- for research purposes.
02:21:22 Q. And are any of the research publications that
02:21:26 you've -- that are listed on Exhibit 5, do any of
02:21:32 them contain surveys that were conducted by you or

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02:21:32 under your control?
02:21:36 A. On 5.
02:21:40 Q. I'm sorry. On Exhibit 1 -- beg your pardon --
02:21:44 your Curriculum Vitae?
02:22:02 A. If I can remember. None by me, but I think a
02:22:04 couple of them were directed by the colleagues who I
02:22:06 coauthored with.
02:22:10 Q. And when -- do you understand at least that --
02:22:10 well which ones are those?
02:22:26 A. Well certainly the -- the one by Arvey, myself,
02:22:32 Bouchard, Taubman, and Cavanaugh, Bouchard has
02:22:34 collected -- run a huge data collection project on
02:22:34 twins.
02:22:38 Q. Okay. Now I assume that in conducting surveys
02:22:42 where questionnaires are employed to obtain
02:22:46 information from particularly a large number of
02:22:48 people that there's a process of pretesting the
02:22:50 questions. Are you familiar with that?
02:22:52 A. That's done sometimes, yes.
02:22:54 Q. And do you know -- do you have an understanding
02:22:58 what that process is, how it's done?
02:23:02 A. I know how some people do it, yes. I'm not --
02:23:08 it's not my what I would call expertise in that I do
02:23:10 this all the time, but I mean typically it's sent out
02:23:12 to a smaller sample of individuals.

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02:23:16 Q. Are you aware of whether the smoking questions
02:23:20 on the NMES questionnaire were pretested?
02:23:24 A. I'm not sure. I know that there was a -- when
02:23:26 they -- you know, the NMES was a series of
02:23:30 questionnaires or series of rounds and --
02:23:30 Q. Right.
02:23:34 A. -- and I know that smoking questions were asked
02:23:38 on not the first round but in a special or additional
02:23:44 round. I don't know if they were pretested or not.
02:23:48 Q. Did the researchers in NMES, the authors,
02:23:50 anticipate that the NMES data would be used to
02:23:54 determine whether an association exists between
02:23:56 healthcare costs and smoking?
02:24:00 A. I don't know what -- what they had in their
02:24:00 mind.
02:24:04 Q. How much attention -- well, strike that.
02:24:10 Assuming that that was not anticipated -- Strike
02:24:10 that.
02:24:20 Do you have an understanding of how much these
02:24:24 authors or researchers focused on the questions
02:24:28 related to smoking as compared to questions about
02:24:34 healthcare utilization expenditures, health
02:24:36 insurance, employment, et cetera, and the other
02:24:36 topics?
02:24:40 A. How much attention they focused on it?

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02:24:42 Q. Yes.
02:24:44 A. I -- again, you know, other than knowing how
02:24:46 many questions were -- I don't know what exactly they
02:24:50 did. All I know is sort of the result of their
02:24:52 deliberations in terms of the actual number of
02:24:54 questions, although I don't remember the exact
02:24:58 number, but the, you know, questions regarding
02:25:06 smoking are sort of similar to what I've seen in
02:25:10 other surveys in number. But, you know, like you
02:25:14 said, there are less than ten and probably -- could
02:25:14 be five.
02:25:18 Q. Actually there were six questions on smoking; is
02:25:20 that your recollection?
02:25:22 A. I'd have to go back and check. I don't -- I
02:25:24 can't remember off the top of my head.
02:25:30 Q. And did they ask how long someone had smoked if
02:25:30 they smoked?
02:25:36 A. I know there's information on the age that they
02:25:42 started, and I know there may be information on the
02:25:48 age that they stopped, but I don't know if they sort
02:25:50 of did what you might call a history where you could
02:25:54 pick up in-between dates precisely.
02:25:58 Q. Or -- or even the -- even how many -- the
02:26:00 quantity of cigarettes they smoked, that wasn't
02:26:02 included, was it?

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02:26:04 A. I can't recall.
02:26:04 MR. McCARTER: Objection; vague.
02:26:06 Q. Would that -- do you understand that -- I know
02:26:10 this is outside your expertise, but do you have an
02:26:12 understanding of what a dose response is?
02:26:14 A. I've heard that mentioned, yes.
02:26:16 Q. And do you understand, at least having a general
02:26:20 understanding, that the dose of cigarettes, meaning
02:26:22 how many cigarettes you smoke over a period of time,
02:26:28 how many packs a day you smoke, may determine how --
02:26:32 what your risk of getting diseases are, and that's
02:26:34 what the concept of dose response means?
02:26:38 A. Right, there's some mention that how many
02:26:40 cigarettes you smoke might affect the risks.
02:26:44 Q. Well that's contained within the Surgeon
02:26:46 General's report that there a dose response
02:26:50 relationship between length of cigarette smoking, the
02:26:54 number of cigarettes smoked and your increased risk
02:26:56 of developing certain diseases; correct?
02:26:58 A. My recollection is in the tables that at least
02:27:02 Dement and Roberts used they're not -- they only use
02:27:04 former or current, they don't use for dose.
02:27:08 Q. I'm talking about the Surgeon General's report,
Dr. McCall?
02:27:08 A. Well I mean --

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02:27:12 Q. Do they find a dose response relationship in the
02:27:18 Surgeon General's report, if you've bothered to read
02:27:18 it?
02:27:20 A. I've read parts of it, and I'm sure I read over
02:27:22 that, but I don't -- can't recall exactly where that
02:27:22 was mentioned.
02:27:24 Q. Well even with respect to current and former, do
02:27:26 you understand that there's different relative risks
02:27:30 between current and former smokers?
02:27:30 A. Yes, I do.
02:27:32 Q. And you understand that the current smokers
02:27:36 generally are higher relative risk than former
02:27:40 smokers, people who have quit, in the -- most of
02:27:40 these diseases?
02:27:46 A. Typically.
02:27:50 Q. Now the question is: Was the issue of dose
02:27:54 response or was the quantity or duration of cigarette
02:27:58 smoking assessed in the NMES data or included within
02:28:04 the questioning?
02:28:10 A. The exact quantity wasn't. I think just how
02:28:14 many years you smoked you could figure out, because I
02:28:18 remember, well, using -- I know Age Start was and I
02:28:20 know Age Stop was. Now whether you started and
02:28:24 stopped a number of times and how you counted that, I
02:28:26 don't believe they did a precise measurement of that,

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02:28:34 but, for example, I recall in some earlier studies,
02:28:40 for example, by Miller, they would break smokers up,
02:28:44 and I think it was either Miller, Vince or Leonard, I
02:28:46 think they both did some stuff, they would break it
02:28:50 up by, you know, formers by whether they smoked for
02:28:52 15 or more years or 15 or less years. But I don't
02:28:58 recall and I'd have to go back and check, you know,
02:29:00 if they asked exactly how many cigarettes you smoked
02:29:02 a day when you smoked. I just don't remember.
02:29:06 COURT REPORTER: Excuse me. I need to
02:29:06 change paper.
02:29:06 (Recess from 11:45 to 11:48 p.m.)
02:29:10 BY MR. WITHEY:
02:29:18 Q. Now -- well certainly would it -- would you
02:29:22 agree that the extent to which NMES data is being
02:29:24 used to assess the difference between smokers and
02:29:28 nonsmokers as to medical expenditures that it would
02:29:34 be important to make sure that the questionnaire
02:29:40 contained questions looking at the dose, if you want
02:29:44 to call it that, of smoking, the duration and extent
02:29:46 of cigarette smoking for the people that were in the
02:29:48 classification of smokers?
02:29:50 MR. McCARTER: Objection; vague.
02:29:56 A. Well, for my purposes, since I was in a sense
02:30:04 doing a sensitivity analysis, and the fact that the

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02:30:06 original analysis I was trying to check the
02:30:12 sensitivity of the mortality ratio approach to using
02:30:14 mortality instead of expenditures, and the fact that
02:30:22 the original approach just sort of did a current,
02:30:24 former, never breakdown, I just wanted to keep it
02:30:30 fairly similar so that I could then check. Had there
02:30:34 been more specific breakdowns, I might have had more
02:30:40 difficulty in data that didn't have -- have that dose
02:30:44 response, but the original -- like I said, my goal in
02:30:48 my NMES analysis was just to test the sensitivity of
02:30:54 the results to certain assumptions trying to hold, I
02:30:58 wouldn't say constant, but, you know, trying to keep
02:31:00 other frame works the same, and the original, the
02:31:04 reports by the Plaintiffs' experts sort of did a
02:31:06 current, former breakdown, and so I thought that that
02:31:10 -- that was not necessary to use a dose response or
02:31:12 consider that in the NMES.
02:31:18 Q. No, I'm actually not --
02:31:20 MR. WITHEY: I'm going to move to strike as
02:31:22 nonresponsive.
02:31:24 Q. I'm not asking whether you did a dose response.
02:31:28 You found -- as I understand, it's your opinion that
02:31:32 the data relied upon and utilized by both Dement and
02:31:36 Roberts was unreliable and invalid; correct?
02:31:38 A. Right, in terms of applying the estimate derived

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02:31:44 from the mortality ratio approach to expenditures.
02:31:46 Q. And you to prove in your -- in your view to
02:31:52 prove the unreliability and invalidity you went to
02:31:56 the NMES data set and derived some analysis of that;
correct?
02:32:00 A. Right, to sort of do is a sensitivity test.
02:32:04 Q. And obviously if the NMES data set is unreliable
02:32:04 and invalid, then your criticisms of -- strike that.
02:32:08 And thus obviously if the NMES data set is
02:32:12 unreliable and invalid, then your conclusions that
02:32:14 flow from that would be suspect; fair enough?
02:32:16 MR. McCARTER: Objection; vague.
02:32:18 A. Again for sensitivity analysis what I was
02:32:26 gearing on was what difference it makes whether, you
02:32:30 know, you should -- you know, a red flag is raised,
02:32:32 and look, here we have these estimates based on
02:32:34 mortality data. Should we maybe worry that it's
02:32:38 mortality data instead of expenditure data? Should
02:32:42 we maybe worry that there's no controls for
02:32:48 confounding, that it's applied to a different type of
02:32:50 population rather than applied to the population
02:32:56 involved in this litigation? I was trying to check
02:32:58 whether or not there -- you know, you might worry
02:33:04 about that, whether you might say, look, you know,
02:33:06 I'm using expenditure data, I'm getting something

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02:33:10 different, and I might want to consider that as a
02:33:14 potential reason for their estimates, and I think
02:33:18 that the NMES is -- is a -- you know, the best
02:33:20 available data set. Had I had the -- enough data
02:33:24 from the medical expenditure files from the Plaintiff
02:33:28 trust funds, you know, I would have used that.
02:33:30 MR. WITHEY: Move to strike as
02:33:32 nonresponsive. Could you read the question back, see
02:33:34 if we got an answer to it.
02:34:22 (The record was read by the reporter.).
02:34:26 MR. McCARTER: There's an objection there.
02:34:26 Interpose again.
02:34:28 MR. WITHEY: In light of the objection, let
02:34:30 me restate the question.
02:34:32 Q. Did you make a conclusion that the data that you
02:34:36 were relying upon within NMES was reliable and valid
02:34:38 for the purposes to which you put it?
02:34:42 A. To the purposes of doing a sensitivity test I
02:34:52 thought that the NMES data was suited for that
02:34:52 purpose.
02:34:54 Q. Was it reliable and valid data for that purpose,
02:34:56 the NMES data set?
02:35:02 A. For my purposes it was -- I guess how are you
02:35:02 defining "reliable"?
02:35:06 Q. Well, I think you used the term in saying that

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02:35:10 John Dement and Stan Roberts' estimates were
02:35:14 unreliable and invalid. I think you've already
02:35:18 testified about that. I guess using those terms, in
02:35:20 that sense did you make -- did you conclude that the
02:35:26 NMES data set that you utilized was reliable and
02:35:28 valid for the purpose to which you put it?
02:35:38 A. Well what I'm -- I guess in terms of using it to
02:35:42 assess whether or not the estimates are potentially
02:35:46 sensitive to the assumption that the mortality risk
02:35:52 equals the -- based on a mortality ratio approach the
02:35:56 relative risk or smoking-attributable expenditures,
02:36:00 it's the same as when you use expenditure, and
02:36:02 whether or not controlling for potential confounders
02:36:08 might also change the results, I think it was
02:36:12 suitable for that, or reliable, or whatever you --
02:36:14 you know, whatever you want to call it.
02:36:16 Q. No, I want you to tell me. It's reliable, the
02:36:20 data is reliable for the purposes that you just
02:36:20 described?
02:36:22 A. That it was again the -- the -- among the
02:36:26 available data, the best data suited for that.
02:36:28 Q. Was it reliable data for the purpose to which
02:36:30 you put it, Dr. McCall?
02:36:36 A. Well, in terms of "reliable," I mean I -- I --
02:36:40 I'm having trouble with what you mean in terms of

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02:36:44 that. I mean I -- like some of the reliability--
02:36:44 Q. Can you rely on it?
02:36:50 A. Some of the reliability I assess automatically
02:36:54 when I sort of report out the confidence intervals.
02:37:00 Now that's more a statistical notion of reliability.
02:37:10 Q. Didn't you say that the underlying -- Strike
that.
02:37:20 In order to determine whether a data set is
02:37:24 reliable, do you need to know something about how the
02:37:26 data was collected, whether there's missing data or
02:37:30 not, whether the questions were designed to examine
02:37:32 the issue to which you're putting the data? Are
02:37:36 those some things you might be interested in finding
02:37:36 out?
02:37:40 A. Well, reliability, I mean the problem is is that
02:37:44 you may not -- your statistical method may not
02:37:48 account for potentially all the sources of
02:37:52 statistical error or random error, including the
02:37:56 error induced by multiple imputation or -- excuse me
02:38:00 -- any sort of imputation, and that might affect
02:38:04 your calculation of your confidence intervals.
02:38:06 MR. WITHEY: Could you read the question.
02:38:28 (The record was read by the reporter.)
02:38:30 A. Well certainly knowledge of the extent of
02:38:32 missing data would be helpful.

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02:38:32 Q. Anything else?
02:38:46 A. In terms of the specific data?
02:38:48 Q. Yes.
02:38:54 A. I mean the -- the type of data, the sample size,
02:38:56 and all these other issues are going to guide sort of
02:39:00 the calculation of the reliability in terms of in a
02:39:00 statistical sense.
02:39:04 Q. How about -- are there ways of assessing the
02:39:06 reliability of data other than in a statistical
02:39:06 sense?
02:39:12 A. Well I mean in a lay person's sense they might
02:39:16 talk about reliability in terms of, you know, whether
02:39:18 it's giving you an answer that's close to the truth.
02:39:22 Q. Are all of the problems with the missing data
02:39:28 reducible to what the confidence intervals are in the
02:39:32 value or sum that you derive in your tables, or are
02:39:36 there other problems in addition to the statistical
02:39:40 sensitivity of the analysis?
02:39:44 A. Well I mean there's a whole host of potential
02:39:46 problems in any data that you have to worry about.
02:39:50 Q. All right. That's what I'm trying to get at.
02:39:52 In addition to how wide the confidence intervals are
02:39:56 in the results that you generated, we're going to
02:39:58 talk about that this afternoon, there's some pretty
02:40:02 wide results -- or pretty wide confidence intervals

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02:40:04 in some of these data that you present?
02:40:06 MR. McCARTER: Objection; vague.
02:40:10 A. There are confidence intervals I present.
02:40:10 Q. Yeah, pretty wide, right?
02:40:12 MR. McCARTER: Same objection.
02:40:16 Q. Between minus 207.2 percent and 24.1, that's a
02:40:18 pretty wide confidence interval on Table 15 on page
02:40:22 24 of the November 6th report; correct? Would that
02:40:26 be a fair characterization of it, Doctor?
02:40:28 A. Again I -- you know, the confidence interval is
02:40:32 the confidence interval. I mean it depends on
02:40:32 relative to what.
02:40:34 Q. You wouldn't describe that as wide?
02:40:38 A. Well I mean, you know, I could characterize
02:40:46 distance, but it depends on what I'm interested in
02:40:46 assessing.
02:40:50 Q. Well, for the purpose of what you're assessing
02:40:54 it for, that's not a wide confidence interval?
02:40:58 A. Well, for what I'm assessing it for, one feature
02:41:04 of the confidence interval that would be of interest
02:41:08 to me is the upper bound moreso than the lower bound.
02:41:12 Q. So you can't say it's wide then, I take it?
02:41:14 You're not willing to say that's a wide confidence
02:41:16 interval; is that correct?
02:41:18 A. Well I can calculate, you know, the width, and

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02:41:22 you know, but for the purposes that I was using this
02:41:24 for, whether it was wide or not, which is a
02:41:28 subjective statement, need not be of concern.
02:41:32 Q. All right. So you didn't care if it was a wide
02:41:34 confidence interval for this purpose; is that
correct?
02:41:36 A. Well, there were certain aspects of the
02:41:38 confidence interval that I was particularly
02:41:42 interested in, some of which may be a function of the
02:41:50 width -- width, but the width in the end did not turn
02:41:50 out to matter for my opinion.
02:41:54 Q. At any rate, you testified there may be other
02:41:56 aspects of a particular data set that you would look
02:42:00 at beyond the confidence intervals that you might
02:42:04 derive from the data presented, and would you agree
02:42:08 that how the survey was conducted and its design
02:42:14 would be one issue, potential importance to know
02:42:16 about, to the extent to which --
02:42:18 A. In general you'd want to know stuff about
02:42:18 design.
02:42:22 Q. And would you want to know about the intent and
02:42:28 the understanding of the authors of the -- of the
02:42:34 data as to how it would be used or could be used? Is
02:42:36 that some topic you're entered in?
02:42:38 MR. McCARTER: Objection; vague.

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02:42:42 A. That may not be, you know, necessary in many
02:42:48 cases whether you're -- you know, I use the -- lots
02:42:52 of data sets where I don't know the intentions of the
02:42:52 authors of the data.
02:42:56 Q. Let me ask you if you agree with this comment:
02:43:02 When data are used by secondary analysts, and you're
02:43:06 in this situation a secondary analyst; correct, --
02:43:06 A. Correct.
02:43:10 Q. -- it is imperative that the analyst be aware of
02:43:14 original analytical goals and objective of the data
02:43:18 collection efforts, the differential qualities of
02:43:20 various measures in the data set and the limitations
02:43:22 of the data?
02:43:24 A. You should be aware of potential limitations
02:43:28 and, you know, try to find out how the data was
02:43:32 collected, but I mean I think at least that part.
02:43:34 But what was the other part? I can't remember.
02:43:36 Q. Would you be interested in the original
02:43:40 analytical goals and objectives of the data
02:43:40 collection effort?
02:43:46 A. It would depend.
02:43:50 Q. Well in this case are you interested in the
02:43:52 original analytical goals or objectives of the
02:43:54 authors or researchers of NMES?
02:43:58 A. For my particular analysis I don't think I need

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02:44:00 those goals.
02:44:00 Q. So you're not --
02:44:04 A. Well I don't know their goals. I mean I have a
02:44:06 broad overview, but not, you know, specific detail.
02:44:10 Q. Let me ask you if you agree with this
02:44:14 statement: Since the NMES data was not collected
02:44:16 with the intention of determining whether an
02:44:18 association exists between healthcare costs and
02:44:22 smoking, the data should not be used for that
02:44:22 purpose?
02:44:46 A. I think if you -- you mean like most data that
02:44:48 you use, the intent typically is not always what you
02:44:52 use it for. I mean the government
02:44:58 collects lots of data and it may just use it say to
02:45:00 estimate unemployment rates or something, but
02:45:04 researchers then take that data and use it for other
02:45:08 purposes. What depends is I guess the -- essentially
02:45:14 your degree of belief on, you know, the accuracy of
02:45:18 the measured variables and other issues like that,
02:45:22 rather than so much what their goal was for that
02:45:22 data.
02:45:26 Q. Okay. Well then what were the potential sources
02:45:28 of measurement errors associated with NMES?
02:45:34 A. Well in any data collection where you have self
02:45:36 reports, you know, you always worry about self

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02:45:42 reports of respondents, you know, whether they smoked
02:45:46 or not, whether that's true, or how much they smoked
02:45:50 or not, whether they really are a current or former
02:45:54 smoker. Those sorts of issues arise in any data set
02:45:54 where you, you know, are asking somebody a question.
02:45:58 Q. I'm asking about NMES; were those present in
02:45:58 NMES?
02:46:00 A. Well, like I said, any data set. Since NMES is
02:46:08 a data set where at least some of the questions, you
02:46:10 know, were answered by respondents, again you worry
02:46:12 about, quote-unquote, "measurement error" in any
02:46:14 data, including NMES.
02:46:16 Q. Well have you made any assessment of the
02:46:20 non-response or non-response bias within NMES to
02:46:22 determine whether that measurement error factor was
02:46:24 significant in your judgment?
02:46:32 A. Not at this time, I haven't looked specifically
02:46:38 at that aspect and how it affects my particular
02:46:38 sensitivity analysis.
02:46:42 Q. Let me ask you this: Would you defer to someone
02:46:46 who was involved in the setup of NMES in conducting
02:46:50 the work on the topic of how the survey was designed,
02:46:58 the questions or pretest questions and the intention
02:47:02 or analytical objectives of the study?
02:47:02 MR. McCARTER: Objection; incomplete

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02:47:04 hypothetical.
02:47:06 A. Defer. I guess I'm unclear of what you mean by
02:47:08 "defer"; in what sense?
02:47:12 Q. Well in the sense that they would know better
02:47:14 than you exactly what they meant and what they
02:47:18 intended in using -- in generating this data, what
02:47:22 the survey design was, whether questions were
02:47:26 pretested or not, how many questions about smoking
02:47:28 and what they were trying to get at, those kinds of
02:47:28 issues.
02:47:28 MR. McCARTER: Same objection.
02:47:30 Q. Would you agree that those people would have
02:47:32 greater knowledge than you would about those topics?
02:47:34 MR. McCARTER: Same objection.
02:47:38 A. Well I guess it would depend on which person in
02:47:40 NMES, but, you know, they may have more knowledge
02:47:44 about which variables were pretested or not.
02:47:46 Q. How about the other things? Break them down.
02:47:50 A, whether the questions were pretested. You don't
02:47:52 know, you would assume they would; correct?
02:47:54 MR. McCARTER: Objection; vague.
02:47:56 Q. Including Nancy Mathiowetz (ph.) would know,
02:47:58 wouldn't you think?
02:48:00 A. She would probably know the extent of
02:48:00 pretesting.

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02:48:00 Q. Right.
02:48:02 A. I guess the boil -- you know, the -- the issue
02:48:06 is -- I don't know if that's part of the question or
02:48:08 if I'm reading into it is whether or not -- how much
02:48:10 you should worry about pretesting.
02:48:12 Q. Well she would certainly know something about
02:48:14 that as well, wouldn't you agree?
02:48:16 A. Well that's a general sort of theoretical
02:48:16 question.
02:48:20 Q. Would she know what the analytical objectives
02:48:26 were? You would assume and defer to her as to her
02:48:28 understanding of what those objectives were?
02:48:32 A. I really don't know exactly in her particular
02:48:34 case what she was involved in.
02:48:36 Q. All right. Well let's talk about the authors
02:48:38 generally, people conducting the research; you would
02:48:42 assume they would know what the analytical objectives
02:48:42 of the survey was?
02:48:46 A. Well I guess I'm a little unclear about what you
02:48:48 mean, "analytical objective".
02:48:50 Q. What they're trying to accomplish with the
02:48:52 survey, what their goals were.
02:48:54 A. Well I mean in a survey like that, usually
02:48:58 you're funded by the government and the government
02:49:02 has certain goals, but that doesn't mean the survey

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02:49:02 can't serve other purposes.
02:49:04 Q. That's not what I'm asking.
02:49:06 Repeat the question.
02:49:16 (The record was read by the reporter.)
02:49:18 Q. Do you believe that -- that the authors would
02:49:20 have some understanding, greater understanding than
02:49:20 you do about that?
02:49:24 A. Well they would probably know better about their
02:49:26 goals than I would know about their goals.
02:49:28 Q. Yeah. And would you defer to them in
02:49:30 characterizing their goals?
02:49:32 A. In characterizing their goals.
02:49:34 Q. The goals of the NMES study?
02:49:36 A. I mean what their goals were, yeah, they would
know.
02:49:38 Q. Yeah. Do you understand that there were
02:49:44 non-response and non-response biases in the NMES
02:49:44 data?
02:49:52 A. There may have been. I have never seen any
02:49:52 particular calculation.
02:49:56 Q. What percentage of the households originally
02:50:00 sampled for inclusion in this study participated?
02:50:10 A. I can't recall. I think the participation rate
02:50:16 was reasonably high, but I know it wasn't 100
02:50:18 percent. I just don't remember.

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02:50:18 Q. You don't know?
02:50:20 A. I could give you -- I saw it once, --
02:50:22 Q. You don't remember the exact number?
02:50:24 A. -- but I just -- I don't remember.
02:50:26 Q. You don't know what it was? You can't tell me
02:50:26 what it was at this point in time?
02:50:28 A. I don't recall. I remember seeing it once, but
02:50:28 I don't remember.
02:50:32 Q. But you drew the conclusion it was high?
02:50:34 A. I remember that it was, you know, -- again
02:50:38 "high" is a subjective --
02:50:38 Q. You used the term.
02:50:42 A. Yeah, I know. Relative to what I've seen, it
02:50:44 was sort of in the neighborhood of being sort of
02:50:46 standard for those sorts of surveys.
02:50:52 Q. How long did the survey take to conduct?
02:50:58 A. Including coding or just including --
02:51:02 Q. Well, conducting the survey, collecting the
02:51:02 information?
02:51:04 A. I believe it was something like 18 months. I
02:51:06 think there was-- it covered mainly the 87 period,
02:51:10 but I think the survey somehow was conducted over an
02:51:10 18-month period.
02:51:12 Q. Was it a complex design?
02:51:14 MR. McCARTER: Objection; vague.

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02:51:16 Q. As opposed to simple design?
02:51:18 A. They may have mentioned -- the sampling design
02:51:22 was not, you know, give everybody in the whole
02:51:24 country a single random number and then let's pick
02:51:28 out -- you know, the sampling design was what you
02:51:28 might consider complex.
02:51:30 Q. Was it stratified?
02:51:32 A. I believe so.
02:51:32 Q. Was it clustered?
02:51:36 A. To the extent that they tended to survey
02:51:38 everybody in the household, it was clustered.
02:51:40 Q. Multistage?
02:51:42 A. I believe so.
02:51:48 Q. Was there any selective oversampling of policy
02:51:48 relevant groups?
02:51:50 MR. McCARTER: Objection; vague.
02:51:54 A. Well I know there were separate -- there was an
02:51:58 institutional population component which was an
02:52:00 oversampling of nursing homes, and then there was the
02:52:04 Native American sample, which was an oversampling of
02:52:08 Native American groups. I can't recall in terms of
02:52:14 Hispanics and African Americans whether there was a
02:52:16 particular oversampling or not on purpose or whether
02:52:18 -- you know, if they focused on cities they would
02:52:22 automatically get oversamplings. You know, you have

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02:52:24 to look at the population rates. I haven't looked at
02:52:24 those specifically.
02:52:28 Q. So you don't know as to the oversampling for
02:52:32 Hispanics, blacks, elderly, poor, near poor and
02:52:32 functionally impaired?
02:52:34 A. There may have been; I just don't recall.
02:52:38 Q. Well might that have some significance in the
02:52:40 results if those population groups were oversampled?
02:52:44 A. Not necessarily, depending on how you handle the
02:52:44 weights.
02:52:46 Q. Have you taken that into consideration, the
02:52:46 oversampling?
02:52:48 A. Well I do for the weights, I put in the
02:52:48 population rates.
02:52:50 Q. Have you taken into consideration in your
02:52:54 analysis and work with NMES that Hispanics, blacks,
02:52:58 elderly, poor, and near poor, and functionally
02:53:00 impaired were oversampled?
02:53:02 A. To the extent that -- well, whether you have to
02:53:06 worry about that or not is -- in looking at certain
02:53:10 types of estimates is one issue, but to the extent
02:53:16 that I do control for the -- essentially the
02:53:18 probability weights in the estimations, that if
02:53:20 they're oversampled those things are adjusted by the
02:53:22 weights.

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02:53:24 Q. Well, I think you just testified a few minutes
02:53:26 ago that you didn't know whether Hispanics, blacks,
02:53:30 elderly, poor, near poor, or functionally impaired
02:53:32 were or were not oversampled?
02:53:34 A. I said I didn't -- what I meant was I didn't
02:53:38 look at the weights. You know, your -- each person
02:53:40 will have a sampling weight, and I don't recall
02:53:46 looking at sampling weights and trying to make that
02:53:48 determination other than using those sampling weights
02:53:50 automatically in my analysis that would adjust for
02:53:54 potential oversampling. Whether it was one group or
02:53:56 another, I didn't make specific determination.
02:53:58 MR. WITHEY: Okay. We're going to break in
02:54:00 just a couple minutes.
02:54:04 Q. Was there measurement errors in the NMES data?
02:54:10 A. I'm sure there was.
02:54:14 Q. Were the errors associated with healthcare
02:54:16 utilization?
02:54:18 A. To the extent there was imputation, there's got
02:54:20 to be.
02:54:22 Q. Was there errors with respect to expenditures?
02:54:26 A. Again, you know, in all data there's measurement
02:54:30 errors, and NMES is no exception.
02:54:32 Q. Well I'm asking you specifically: Are you aware
02:54:34 from either reviewing the CD Rom or other

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02:54:38 descriptions of NMES whether there were measurement
02:54:40 errors in the reporting of smoking behavior in NMES?
02:54:46 A. I don't recall any -- other than missing value
02:54:52 problems and the fact that there was sort of two
02:54:56 types of missing values, the fact that not everybody
02:55:02 participated in that one survey that asked those
02:55:04 questions, and also those who did participate may,
02:55:08 you know, quote "I don't know," or something like
02:55:10 that, I don't know the extent of the measurement
02:55:14 error in the smoking. I presume there is some, but I
02:55:16 don't know what its extent is.
02:55:18 Q. So you assume that there is measurement errors?
02:55:20 A. To some extent.
02:55:22 Q. I'm talking about beyond missing data. You
02:55:24 understand there's a difference between measurement
02:55:26 errors and missing data?
02:55:28 A. Well, yeah. Well to the extent that you impute
02:55:32 and use imputed data, the imputed value is not equal
02:55:34 to the actual value; therefore you've automatically
02:55:40 created a missing value -- a measurement error
02:55:40 problem.
02:55:42 Q. In any missing data imputation there's a
02:55:46 measurement error problem; fair enough?
02:55:46 A. Right.
02:55:48 Q. But I'm asking you in addition to or besides the

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02:55:50 missing data problem whether there are measurement
02:55:54 errors in the reporting of smoking behavior of NMES
02:55:56 of those that did report smoking?
02:55:58 A. I believe -- again, there probably is, but I
02:56:00 don't know the extent of it.
02:56:04 Q. Was there measurement errors in -- in the
02:56:06 measurement of other health behaviors in NMES?
02:56:12 A. Well, I -- again, I'm -- in general when you're
02:56:18 -- when you're asking respondents to make some
02:56:22 recollection of events or extents of use, there's
02:56:26 bound to be measurement error due to, you know,
02:56:30 problems like grouping, how they round, tend to
02:56:32 round, and those sorts of things.
02:56:32 Q. All right.
02:56:36 A. I'm just sort of assuming there is measurement
02:56:40 error in all data, and NMES is no exception.
02:56:42 Q. Have you made a determination of whether the
02:56:44 measurement errors in NMES were of high enough
02:57:00 quality and importance to justify the conclusion that
02:57:06 the NMES data therefore should not be used in
02:57:10 quantifying the extent of the relationship between
02:57:12 healthcare costs and smoking?
02:57:14 MR. McCARTER: Objection; vague.
02:57:14 A. Again, I --
02:57:16 Q. I'm just asking if you've made that

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02:57:18 determination?
02:57:24 A. Whether the measurement error was so large --
02:57:24 Q. Yeah.
02:57:26 A. -- that you can't use it for that purpose. I
02:57:26 haven't made that determination.
02:57:28 Q. You've assumed that it is not so large because
02:57:30 you have in fact reported your analysis of the NMES
02:57:34 data in your various tables; correct?
02:57:36 MR. McCARTER: Objection.
02:57:38 A. Well, you know, implicitly --
02:57:40 Q. Go ahead.
02:57:44 A. Implicitly by using it as a sensitivity test I
02:57:56 am, you know, saying that -- that it's a reasonable
02:57:58 data set to use to check the validity of that
02:58:02 particular assumption in the Dement and Roberts
02:58:04 report. I haven't made an independent assessment of
02:58:08 the extent of measurement error and how that might
02:58:08 affect my results at this time.
02:58:12 Q. Let me see if you agree with this. In light of
02:58:14 the measurement problems that plague the NMES data,
02:58:16 ranging from the inability to accurately identify
02:58:20 Medicaid recipients to the lack of valid measurements
02:58:24 of years of smoking, as well as the myriad of other
02:58:28 measurements problems enumerated -- other measurement
02:58:34 problems, the data from NMES are not of high enough

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02:58:36 quality for the purpose of determining the existence
02:58:38 of and quantifying the extent of the relationship
02:58:40 between healthcare costs and smoking?
02:58:42 MR. McCARTER: Objection; it's vague and
02:58:42 compound.
02:58:46 A. Well, --
02:58:48 Q. Do you agree generally with that statement?
02:58:54 A. I'd have to look at it in more detail. All I
02:58:56 know is that for my purposes I was not trying to get
02:59:00 that sort of estimate rather than perform a
02:59:02 sensitivity test, but --
02:59:06 Q. So you don't agree with the statement then, or
02:59:06 you do?
02:59:08 A. No. I say for my purposes I don't know if that
02:59:10 statement applies, whether or not I agree with it,
02:59:12 but I don't have the information enough at this time
02:59:14 to assess that -- that statement.
02:59:24 Q. Do you believe the sample size in the NMES
02:59:26 population is sufficient to make state level
02:59:32 estimates in a state as small as -- or the size of
02:59:34 Ohio?
02:59:34 MR. McCARTER: Objection; vague.
02:59:42 A. Again I have -- I -- I'd have to remember even
02:59:46 whether in NMES you can identify state at least in
02:59:52 the -- the -- maybe you can't. Maybe it's NHIS you

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02:59:54 can't. I haven't looked at that question.

02:59:56 MR. WITHEY: Okay. Why don't we take a

02:59:58 lunch break.

03:00:02 (Recess from 12:19 to 1:14 p.m.)

03:00:04 A F T E R N O O N S E S S I O N

BY MR. WITHEY:

03:00:06 Q. Let me ask you to direct your attention to the

03:00:08 November 6th report, Exhibit 2.

03:00:10 A. All right.

03:00:16 Q. I'm sorry. One last question on this NMES data

03:00:30 issue: Have you asked to see any of the reports,

03:00:38 expert reports by defense experts as it relates to

03:00:42 their assessments of the NMES database, its

03:00:44 reliability, its usefulness?

03:00:46 MR. McCARTER: You mean defense experts in

03:00:48 this case?

03:00:50 MR. WITHEY: No, in any tobacco case.

03:00:52 A. I don't recall asking explicitly for that.

03:00:58 Q. Fine. And I asked Professor Rubin this, and in

03:01:00 the event there is an expert report written by either

03:01:06 Nancy Mathiowetz (ph.) or someone else related to the

03:01:10 NMES data, is that something that you would like to

03:01:12 see, you'd be interested in reviewing to get her

03:01:14 opinions or judgments on?

03:01:18 A. I guess I -- I mean I would review it if it was

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03:01:18 provided to me.
03:01:22 Q. For whatever value it may be to you in assessing
03:01:24 the structure of the NMES survey, the question of
03:01:28 measurement errors, and the analytical design, those
03:01:30 kinds of things?
03:01:32 A. Well, for my purposes, yes.
03:01:32 Q. Yes?
03:01:32 A. For my purposes, yes.
03:01:42 Q. Okay. Okay. Great. Exhibit 6 --
03:01:44 MR. McCARTER: 2.
03:01:52 Q. No. Exhibit 2. Excuse me. On Table -- let's
03:01:54 look at page 24, Table 15.
03:02:00 A. Okay.
03:02:04 Q. Where in -- in your November 6th report do you
03:02:08 describe the methodology you used to generate the
03:02:16 values of Table 15?
03:02:24 A. I believe it was in my computer code, which I'm
03:02:30 pretty sure I supplied. I don't know how you didn't
03:02:32 get it. I don't know if I -- let's see -- how
03:02:40 detailed I explained it in the -- in the text other
03:02:42 than saying which variables I controlled for.
03:02:46 Q. That's what I'm asking. Where in the report do
03:02:50 you describe the methodology used to generate the
03:03:02 values in Table 15? If at all?
03:03:04 A. Right. I mean other than telling which

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variables I control for and which data I use which is, like I said, at the bottom of page 12 in footnote 2, I didn't go in explicit detail into the -- the methods, other than it's in my computer code.

Q. Did you understand in submitting the report that -- that you were expected not only to give the opinions you have but the basis of the opinions, the methods employed? Did you have that understanding?

A. Well I just I guess thought in this case that the computer code would explain.

MR. WITHEY: Read the question, please.

(The record was read by the reporter.)

A. I had an understanding in that vein, and that's why I supplied the computer code to -- which has underlying basis for the calculation.

Q. Now the computer code that you're referring to that you claim you may -- or probably sent on November 6th, that's -- that's different than the spreadsheets; correct?

A. Yes.

Q. And you supplied a disk on January 23rd, or we actually received it the following Monday, January 25th, pursuant to your January 22nd report; correct?

A. Correct.

Q. And in that computer code is there a description

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03:04:54 of the methodology you used to generate the values of
03:04:56 Table 15?
03:05:00 A. The code itself explains how it's generated. I
03:05:04 mean you can by looking at the code see how I got
03:05:08 from -- although I don't know if I -- since I gave
03:05:12 you the -- or at least I presumably gave you the
03:05:16 original documents, I just -- you know, going from
03:05:20 the NMES data to the actual estimate --
03:05:22 Q. Right.
03:05:24 A. -- there's at least one program that's sort of,
03:05:26 you know, a mid point going from the original data,
03:05:30 then getting some data off of that, and then there's
03:05:34 the estimation programs, and since I thought I gave
03:05:36 you the original program that kind of takes the data
03:05:42 off the -- off the NMES, the data that you're using,
03:05:44 I didn't provide that in the supplementary because
03:05:48 it's the same program, but those files that I
03:05:52 provided in supplementary, these .do (dot do) files
03:05:56 that are data files are the ones that take the data,
03:05:58 and you should be able to see the methodology that's
03:06:02 used to estimate these numbers given the data.
03:06:04 Q. There's not a written description of the
03:06:08 methodology in any of the computer programs you sent;
correct?
03:06:10 MR. McCARTER: Objection.

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03:06:12 A. Well it should be evident from the programs.
03:06:12 Q. No.
03:06:16 A. It's not in English I mean.
03:06:16 Q. That's what I'm saying.
03:06:18 A. There's no detail --
03:06:20 Q. It would take -- in other words, it would take a
03:06:24 computer knowledgeable person to try to figure out
03:06:26 what method you used from the numbers you gave and
03:06:30 the display of the data in that computer program;
03:06:30 right?
03:06:32 A. Somebody what was familiar with this data;
correct.
03:06:36 Q. Right. As opposed to here's how -- here's a
03:06:38 description of the method I used to generate the
03:06:40 values in these tables. That's not in what you sent
03:06:42 us on disk; correct?
03:06:44 A. No details, no.
03:06:44 Q. Okay.
03:06:48 A. Not -- there may be like one or two comments,
03:06:50 but nothing detailed.
03:06:52 Q. Well there's not a written report that describes
03:06:52 --
03:06:54 A. No, not a written report.
03:06:58 Q. -- the data or the methodology in it? Is this
03:07:00 the whole NMES data set?

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03:07:02 MR. McCARTER: Is what?

03:07:04 Q. What was used to generate the values in Table
03:07:10 15? Did you base it upon the entire NMES data set?
03:07:14 A. It starts from -- I mean the original data is
03:07:16 drawn from that. Again, there are certain people who
03:07:20 are missing values and other things that I don't
03:07:24 think the sample is ever -- I think NMES roughly
03:07:30 starts with 38,000. There's not 38,000 in the
03:07:32 ultimate sample.
03:07:34 Q. All right. And so if you didn't generate data
03:07:38 on the entire NMES data set, where do you indicate
03:07:40 the selection criteria you used?
03:07:44 A. Again, that would be in the computer code.
03:07:46 Q. Did you do it in writing in any report
03:07:50 indicating what the selection criteria were used?
03:08:14 A. Not in explicit detail. I mention the age
03:08:20 ranges; i.e., 35 and over, which gets -- eliminates a
03:08:20 large number of people.
03:08:22 Q. All right. Other than the age range, did you
03:08:26 indicate anywhere in English in your report the
03:08:28 selection criteria you used?
03:08:40 A. Again, I don't think in English. Just in my
03:08:40 computer code.
03:08:42 Q. When -- did you control for education?
03:08:42 A. Yes.

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03:08:46 Q. And how did you quantify or stratify the
03:08:48 education level of the study participants?
03:08:54 A. I believe it was years of completed schooling.
03:08:58 Q. Where is that procedure described in English in
03:09:00 your report?
03:09:06 A. Again, all my variable constructions and
03:09:08 definitions would be in the computer code.
03:09:12 Q. And thus not in English in the report; correct?
03:09:14 A. No, not in the report.
03:09:16 Q. Where in your report do you describe how you
03:09:18 quantified or stratified any of the control
03:09:20 variables?
03:09:24 A. I report on the stratifications in the append --
03:09:28 or the footnotes to the tables, models estimated
03:09:30 separately by age and gender, models estimated
03:09:34 separately by age, smoking status, and gender.
03:09:42 Q. Could the models -- well, that's just -- excuse
03:09:48 me. That's just identifying control variables, not
03:09:50 describing how you quantified or stratified those
03:09:52 control variables; correct?
03:09:56 A. Well they're stratified across those groups, and
03:09:58 within each subgroup they're controlled for in a
03:10:02 linear fashion. The other controls are added in a
03:10:02 linear fashion, you know.
03:10:04 Q. Well, for instance, -- I'm sorry.

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03:10:08 A. I mean it's, you know, the equivalent to a
03:10:10 regression although it's a little more advanced than
03:10:10 a regression.
03:10:14 Q. Well you say controls are added for region of
03:10:16 the country. Which regions were selected?
03:10:18 A. Essentially there was four regions. There was
03:10:26 -- by control there was a variable which indicates
03:10:28 which region of the country you're in, either -- you
03:10:30 know, the four regions being northwest -- or excuse
03:10:34 me -- northeast -- northeast, south, west, and which
03:10:36 is essentially the Midwest or north central.
03:10:40 Q. Those were four? Could you state them again?
03:10:42 A. Northeast is one.
03:10:42 Q. Northeast is one.
03:10:44 A. South.
03:10:44 Q. Okay.
03:10:50 A. West. And Midwest or sometimes referred to as
03:10:50 north central.
03:10:58 Q. Okay. And you didn't see fit, as I understand
03:11:02 it, in your -- in your report to describe those more
03:11:04 particularly then; correct?
03:11:06 A. In the report I just mentioned the general
03:11:10 nature of the controls rather than the specific way.
03:11:14 Q. All right. But certainly the stratification or
03:11:18 quantification of the control variables is -- is --

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03:11:20 forms a basis of the opinions you're giving; correct?
03:11:24 A. Well it's generating the estimates which form
03:11:26 the basis. I mean --
03:11:30 Q. Well but how you stratify the -- the control
03:11:34 variables is important to the end product; correct?
03:11:36 A. Right, and that's why I included my computer
03:11:38 code.
03:11:38 Q. If you did?
03:11:42 A. If I did. Well, I -- I did at least in the
03:11:44 second report. Or third I guess it was.
03:11:48 Q. Is it your testimony that in the third disk that
03:11:52 you sent that we received on January 25th that you
03:12:00 described or was described in there the selection
03:12:04 criteria for all of these variables for these charts,
03:12:04 Table 15 and 16, --
03:12:06 A. Oh, oh, for the --
03:12:06 Q. -- 17?
03:12:10 A. Not for that table, no. I confused it.
03:12:14 Q. You're talking about the computer disk that
03:12:14 accompanied the --
03:12:16 A. The other Table.
03:12:16 Q. -- the January 22nd report?
03:12:18 A. Right.
03:12:20 Q. But not for this, Table 15?
03:12:22 A. I believe I sent that disk. Where it ended up,

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03:12:24 I'm not sure.

03:12:26 Q. No, I'm talking about the disk that you sent in January.

03:12:30 A. Right, didn't have it for this table here.

03:12:30 Q. And they were different; correct?

03:12:36 A. The way I generated most of the variables were the same.

03:12:38 Q. Well --

03:12:42 A. I controlled for more in the one report than the other; in particular, took account of insurance status, although there's --

03:12:50 Q. Were there any other differences that you can think of then?

03:12:52 A. Between the two reports?

03:12:58 Q. Between the two ways in which you made the selection criteria and stratified the selection criteria?

03:13:04 A. Again, I don't --

03:13:04 Q. Or control.

03:13:08 A. Other than the -- the sort of differences with regard to insurance status or -- or -- or that variable, I don't recall any differences.

03:13:22 Q. Could the models estimated in Table 15 be described as mathematical equations?

03:13:30 A. The models estimated in -- what Table again were

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03:13:30 you --
03:13:32 Q. Table 15.
03:13:36 A. 15. They're statistical models which you then
03:13:42 use to derive these estimates, so I would --
03:13:46 Q. You can reduce them to mathematical equations,
03:13:48 can you not?
03:13:54 A. I'm trying because in some of these there is no
03:13:58 -- you can't analytically solve so you have to have
03:14:02 computer search routines solve it. You can write
03:14:04 down a set of conditions that the estimates have to
03:14:08 satisfy, which are mathematical equations.
03:14:10 Q. Right. Those don't appear in your report;
correct?
03:14:12 A. No.
03:14:14 Q. That is correct?
03:14:14 A. That is correct.
03:14:18 Q. What software was used to perform the analysis
03:14:22 underlying Table 15 of the November 6, 1998 report?
03:14:26 A. I believe as a first pass to get -- sort of pull
03:14:32 the data off of the disk, the NMES disk, data disk,
03:14:38 which is actually a CD Rom, I used the program S-A-S,
03:14:38 SAS.
03:14:40 Q. What does that stand for?
03:14:44 A. Statistical Analysis System.
03:14:46 Q. Is that the same computer program used for

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03:14:52 Tables 16 and 17 of the report of November 6th?
03:14:54 A. Yeah, well, I used another program. I mean
03:14:58 there's sort of two parts, right. There's the first
03:15:00 data pull and then there's sort of the second part
03:15:02 which is the estimation.
03:15:02 Q. Right.
03:15:04 A. In the second part I used a program called
03:15:06 STATA.
03:15:06 Q. How do you spell that?
03:15:10 A. Capital S-T-A-T-A.
03:15:12 Q. What does that stand for?
03:15:16 A. I don't know. Just STATA. I don't know if
03:15:16 there's an acronym or not.
03:15:20 Q. All right. So SAS was used to pull and select,
03:15:24 if you will, the NMES data, and the STATA was used in
03:15:26 order to generate these tables?
03:15:28 A. To get the estimates, right.
03:15:30 Q. And what software programs were used for Tables
03:15:34 16 and 17 of the November 6th report?
03:15:36 A. The same, the same programs.
03:15:38 Q. What computer software programs were used to
03:15:42 generate Tables 2 through 4 of your January 22nd
03:15:44 Supplemental Report, Exhibit 4?
03:15:48 A. That was the same -- the same programs.
03:15:50 Q. Have you provided defense counsel with copies of

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03:15:54 the computer programs used to generate any of the
03:15:58 values in your November 6th, 98 or January 22nd
03:15:58 Supplemental Report?
03:16:00 A. I believe I have.
03:16:14 Q. Well, I assume you didn't bring these programs
03:16:16 with you; correct?
03:16:16 A. No.
03:16:18 Q. You did not?
03:16:18 A. I did not.
03:16:22 Q. Could you indicate which programs correspond to
03:16:30 which table of results, or do both of them apply to
03:16:32 all -- all of the results?
03:16:40 A. The SAS program, that sort of takes the first
03:16:46 cut at the data, right. I first pull off the NMES
03:16:50 data. NMES data, that applies to all the estimates,
03:16:54 sort of just taking the first pull and getting the
03:17:00 data off. I believe I have a number of do programs,
03:17:04 and each -- which are STATA programs, do files
03:17:06 they're called are the actual name for the program
03:17:12 file, each -- I think they're separate programs for
03:17:18 -- for each column, although it may cut across
03:17:18 tables.
03:17:24 Q. Well can you identify which programs correspond
03:17:26 to which column of results?
03:17:28 A. I'm trying to remember the -- the --

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03:17:32 Q. In Table 15, for instance?
03:17:40 A. No, I know. What the original names, I think
03:17:44 they're -- is it S-A-F? I can't remember if it's
03:17:50 underscore B, underscore 1 and something like that.
03:17:50 Q. What does that mean?
03:17:52 A. That's just the name I --
03:17:52 Q. S-A-F?
03:17:56 A. Oh, oh. I thought you meant the way I named the
03:17:58 actual code file. You're talking about the STATA
03:18:00 program versus the SAS?
03:18:00 Q. Yes, right.
03:18:04 A. SAS was used to essentially do the first pull of
03:18:06 the data, which was involved in all the estimations,
03:18:10 and then STATA program was used to get the estimates,
03:18:12 which is involved in all of them too. I thought you
03:18:16 meant what were the names of the files of the code
03:18:18 that I actually wrote and for which -- yeah.
03:18:20 Q. I assume the name of the files would be on the
03:18:22 supposed computer disks?
03:18:24 A. Yeah. No, right.
03:18:28 Q. Now for Table 15 have you selected a subset of
03:18:30 the NMES population for your analysis?
03:18:38 A. The subset, well, one criteria was 35 and over.
03:18:40 Q. Any others?
03:18:58 A. They again had to essentially have valid data

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03:19:00 for the independent variables, not missing.
03:19:10 Q. Was does that mean? You're saying that there's
03:19:14 a subset of the NMES population where there was valid
03:19:16 data for the independent variables?
03:19:20 A. Well in some cases they -- they may have not
03:19:22 answered a question and they would code that as a --
03:19:26 wouldn't be missing in the sense there would be no
03:19:30 number, but they usually code it as a minus 7 or some
03:19:32 number they attach to it which indicates an invalid
03:19:34 response or a missing response for some of the --
03:19:38 Q. So how did you treat that?
03:19:40 A. I just did -- you know, at least just those that
03:19:42 had missing values I didn't make any attempt to
03:19:48 impute, but just excluded them from the estimation.
03:19:50 Q. Is there any description of that process in your
03:19:50 report?
03:19:54 A. Not in the report, but again in the computer
03:19:56 files it would show that.
03:19:56 Q. It would show --
03:20:02 A. Like "If missing, then delete" type statement.
03:20:06 Q. Was there any subset of the NMES population
03:20:16 other than over 35 and "If missing, then delete"?
03:20:18 A. Not that I can recall.
03:20:24 Q. So there was no other selection criteria from
03:20:28 the NMES population other than those two then?

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03:20:30 A. I believe so, yes.
03:20:32 Q. How many smokers met that criteria?
03:20:42 A. I can't recall off the top of my head. All I
03:20:44 remember is sort of a total number for everybody in
03:20:46 the ballpark, but --
03:20:48 Q. What was that number?
03:20:56 A. 13,000 sticks in my head. Somewhere in the
03:20:58 13,000 range.
03:21:00 Q. Out of how many?
03:21:06 A. Well the total NMES is 38,000. I don't know
03:21:10 what the total is in terms of 35 and over.
03:21:12 Q. So you --
03:21:14 A. I can't decompose the -- going from 38,000 to
03:21:18 13,000 and how many were eliminated simply because
03:21:18 they were under 35.
03:21:22 Q. And you can't tell me how many smokers fell
03:21:24 within that 13,000; correct?
03:21:28 A. Not -- yeah, I could give you a ballpark guess,
03:21:30 but I don't know the number off the top of my head.
03:21:32 Q. Not expected to guess. Do you know how many
03:21:36 former smokers met those criteria, over 35 and
03:21:40 missing data not --
03:21:42 A. Not exactly.
03:21:42 Q. How about never smokers?
03:21:44 A. Not exactly.

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03:21:46 Q. Well, can you -- can you give me your best
03:21:50 estimates of those -- that breakdown?
03:21:54 MR. McCARTER: You don't have to guess
03:21:56 either. I mean if you give an estimate --
03:22:00 A. Well I can give a ballpark there. In each one
03:22:02 there were potentially multiple thousand.
03:22:02 Q. Okay.
03:22:04 A. You know.
03:22:06 Q. Any percentage breakdown, any general rough
03:22:08 estimates of the numbers that you could give us for
03:22:12 smokers, former smokers, and never smokers?
03:22:28 A. Roughly I would say probably maybe about 5 or
03:22:30 6000 never smokers and then the rest equally split
03:22:34 among former and current.
03:22:36 Q. Have you made any comparisons between that and
03:22:40 the estimates of prevalence of smoking by those
03:22:44 criteria in the National Health Interview Survey
03:22:48 utilized by John Dement for this population?
03:22:50 A. Compared the prevalence estimates between the
03:22:56 NMES and the NHIS, is that what you're asking?
03:23:00 Q. Yes. Did you do that is what I'm asking?
03:23:04 A. I may have at one point looked at the two, but I
03:23:06 don't recall what the outcome. I didn't do any
03:23:12 explicit one where I remember writing it down. I may
03:23:14 have -- well, I know I've looked at one and looked at

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03:23:16 the other. I can't recall what the differences are.
03:23:18 Q. Well are you prepared today at this deposition
03:23:20 to give the numbers then for smokers, nonsmokers, and
03:23:20 former smokers?
03:23:22 MR. McCARTER: What numbers?
03:23:24 MR. WITHEY: The numbers that he derived
03:23:28 from the NMES data using the selection criteria for
03:23:32 the NMES data set that he utilized?
03:23:34 Q. You can't give me the exact numbers, can you?
03:23:38 A. I don't remember them off the top of my head.
03:23:40 Q. Right. And you didn't bring the -- it's not in
03:23:40 your report; correct?
03:23:44 A. Well it presumably is in --
03:23:44 Q. In your written report?
03:23:46 A. In the written report I didn't present those
03:23:50 numbers, but it would certainly be in the computer
03:23:50 code.
03:23:54 Q. But -- but you didn't bring the computer code
03:23:56 with you, so you can't testify what they are;
correct?
03:23:58 A. Well, I --
03:24:00 MR. McCARTER: He didn't bring his computer
03:24:00 code.
03:24:04 A. By looking at the computer code I couldn't tell
03:24:04 you the numbers, but you could get the numbers from

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03:24:06 the computer code, if I had a computer with me and
03:24:08 the data.
03:24:10 Q. Or we would -- you could push a button and print
03:24:12 the data; correct, or at least as to that number,
03:24:14 right, couldn't you?
03:24:14 A. Yeah, if I had the computer program.
03:24:16 Q. You didn't do that; right?
03:24:18 A. I did at some point.
03:24:18 Q. You did?
03:24:22 A. Well I believe that in the programs that
03:24:26 generate the estimates there is also parts of the
03:24:30 program that may also be generating those sorts of
03:24:34 numbers. I just don't recall exactly. You know, I
03:24:38 did a lot of different things in those -- those
03:24:40 programs that I gave to you. Whether or not they
03:24:42 explicitly calculated means or certain variables, I
03:24:46 can't recall, but some of the output may actually
03:24:46 give you the means.
03:24:50 Q. Let me ask you a couple questions about the
03:24:52 confidence intervals. If you have two ways --.
03:24:54 In general, Doctor, if you have two ways of
03:24:56 measuring something, both subject to measurement
03:25:00 error how can you tell if any difference in the
03:25:02 results obtained from the two methods is real or
03:25:02 not?

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03:25:04 MR. McCARTER: Objection; incomplete
03:25:04 hypothetical.
03:25:10 A. See if I understand. You have two methods of --
03:25:10 Q. Measuring something.
03:25:12 A. Right.
03:25:16 Q. Both of them subject to measurement error, as is
03:25:18 common. Fair enough.
03:25:18 A. Right.
03:25:20 Q. How can you tell if any difference in the
03:25:22 results obtained from the two methods is real?
03:25:36 MR. McCARTER: Same objection.
03:25:42 A. Yeah, I don't understand what you define as
03:25:42 "real".
03:25:46 Q. Is actual. Is it useful to look at the overlap
03:25:50 of confidence intervals is what I'm getting at
03:25:50 between those two?
03:25:50 A. The overlap.
03:25:52 MR. McCARTER: Objection; vague.
03:25:56 Q. If any, of confidence intervals. Is this a
03:25:58 useful way -- a useful, not necessarily the only way,
03:26:00 of trying to determine whether the two ways of
03:26:04 measuring something, both subject to measurement
03:26:06 errors, where there's differences of the result, is
03:26:08 or is not real or actual?
03:26:10 MR. McCARTER: Same objection.

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03:26:16 A. Hmm. I think the problem is is that looking at
03:26:20 that overlap may not -- I'm a little unclear what
03:26:22 you're saying, but I'll answer what I think you're
03:26:24 saying, you know, the question I think you're
03:26:32 asking. If you're trying to sort of test for
03:26:36 significant differences, then it is not always the
03:26:40 case that that test is equivalent to looking for
03:26:44 overlapping confidence intervals.
03:26:46 Q. No, I'm not asking you that. I'm saying is it
03:26:50 useful, is it an analytical tool, not the be all and
03:26:56 end all, to look at the two numbers generated from
03:27:00 the measurements, if you will, that you're making to
03:27:02 see if there -- Strike that.
03:27:06 You understand the idea that in presenting data,
03:27:10 and again unlike your Northwest Laborers report, at
03:27:14 least in this report you present confidence intervals
03:27:16 for all the values let's say in Table 15; correct?
03:27:18 A. Correct.
03:27:22 Q. And is -- and is one way of determining whether
03:27:28 there is a real difference in two ways of measuring
03:27:30 something, both of which are subject to measurement
03:27:34 errors, is to look at the confidence intervals of one
03:27:36 and compare them to the confidence intervals of the
03:27:40 other measurement and to see if those confidence
03:27:40 intervals overlap?

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03:27:42 MR. McCARTER: Same objection.
03:27:46 A. The question is whether that gives you any
03:27:50 useful information or not I think.
03:27:52 Q. Well, yeah, okay. Does it give you any useful
03:27:54 information?
03:27:56 A. Well, like I said, if you're doing some
03:27:58 statistical tests for differences --
03:28:00 Q. Right.
03:28:04 A. -- based on some level, significance level, that
03:28:14 might give you inaccurate results or misleading
03:28:14 results.
03:28:16 Q. Have you ever compared the confidence intervals
03:28:20 from two sets of measurements to see if they overlap
03:28:20 or not?
03:28:24 A. I may have looked at overlapping intervals, but
03:28:28 I never took that information and used it to then
03:28:30 make an assessment of whether two estimates are
03:28:34 statistically different or not.
03:28:36 Q. If the difference between the two estimates are
03:28:38 -- Strike that.
03:28:44 Is the difference between two estimates
03:28:46 statistically significant if their confidence
03:28:48 intervals overlap?
03:28:50 A. Is the -- wait. Could you repeat that?
03:28:52 Q. Again, two estimates. All right. Is the

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03:28:58 difference between the two estimates statistically
03:29:00 significant if their confidence intervals overlap?
03:29:02 A. It may be.
03:29:04 Q. What if the mid point of one falls within the
03:29:08 confidence interval of the other, is that a
03:29:10 difference that is statistically significant?
03:29:16 A. So you're saying if the point estimate --
03:29:16 Q. Yes.
03:29:18 A. -- which is usually the mid point but not
03:29:18 always --
03:29:20 Q. Right. Of one.
03:29:22 A. -- falls within --
03:29:24 Q. If it falls within the confidence interval of
03:29:24 the other.
03:29:30 A. Then it's not statistically significant,
03:29:34 different, depending on -- well assuming they're
03:29:36 independent samples that you're estimating.
03:29:38 Q. Fair enough. Now based on the analysis
03:29:42 described in Table 15 do you reject the null
03:29:46 hypothesis; that is, the hypothesis that adding
03:29:48 controls has no affect on the calculated
03:29:52 smoking-attributable fractions?
03:29:58 A. I have -- do I reject the null that adding
03:30:00 controls has no effect?
03:30:16 Q. Yes.

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03:30:20 A. I think the one -- I don't know if I actually
03:30:22 performed that test, although I recall performing or
03:30:26 looking at results regarding whether or not those
03:30:36 control variables significantly affect the -- or are
03:30:40 related to the outcome variables, which in this case
03:30:42 are medical expenditures for, quote-unquote
03:30:46 "smoking-related conditions," but I don't think I
03:30:46 performed that test.
03:30:50 Q. With what level of statistical confidence do you
03:30:56 reject the null hypothesis, if you do? And I guess
03:31:00 you're saying you haven't performed the null
03:31:00 hypothesis analysis; is that correct?
03:31:02 MR. McCARTER: Yeah.
03:31:04 A. Of the exact one you're talking about.
03:31:06 Q. Yeah, right now we're talking about 15.
03:31:10 A. Right. Whether controls change the result,
03:31:12 right?
03:31:16 Q. Right. You have not considered and thus have
03:31:18 not rejected the null hypothesis?
03:31:20 A. I haven't made those calculations.
03:31:22 Q. All right. So you can't tell me then what is
03:31:26 the statistically significant likelihood that there
03:31:28 is in fact no difference between the three control
03:31:30 sets; is that correct?
03:31:32 A. I haven't made that determination at this point

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03:31:34 since they're all based on the same data.
03:31:38 Q. So you cannot describe then the likelihood that
03:31:40 there is in fact no difference?
03:31:42 A. Between these three columns.
03:31:44 Q. Yes, correct.
03:31:46 A. I haven't made that determination.
03:31:48 Q. Therefore it's correct, you cannot describe the
03:31:50 likelihood because you haven't made the
03:31:50 determination?
03:31:52 A. Correct, at this time.
03:31:56 Q. All right. Let's go to Table 16. Based on the
03:32:00 analysis described in Table 16, do you reject the
03:32:06 null hypothesis; that is, the hypothesis that adding
03:32:08 controls has no effect on the calculated
03:32:10 smoking-attributable fractions?
03:32:12 A. Again I haven't made that.
03:32:14 Q. To save time --
03:32:14 A. Yeah, I have not.
03:32:18 Q. -- is it true of every table in your reports
03:32:22 that those answers would be the same as to the null
21 hypothesis?
03:32:22 A. Yes.
03:32:24 Q. And thus you have not rejected the likelihood
03:32:26 that there is in fact no difference between the
03:32:28 control sets set forth; correct?

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03:32:28 A. Correct.
03:32:36 Q. Now in the analysis of NMES how many different
03:32:38 ways are there of choosing controls and setting the
03:32:46 stratification criteria?
03:32:48 A. A lot.
03:32:50 Q. Almost infinite? Not quite, but close to
03:32:52 infinite?
03:32:52 A. Higher than you can count.
03:32:56 Q. Okay. I mean it could be in the millions;
correct?
03:32:56 A. Potentially.
03:33:00 Q. Have you performed any sensitivity analysis of
03:33:02 the effects of changing your choice of control
03:33:04 variables?
03:33:18 A. Well, I have different control variables sets in
03:33:20 here I mean so I am changing it within my analysis
03:33:24 control set 1, 2, 3 and 4 essentially across the two
03:33:26 studies or two reports.
03:33:28 Q. I understand you changed control variables,
03:33:32 you've identified that. The question I have is:
03:33:36 Given the fact there are millions of ways of choosing
03:33:40 controls and setting the stratification criteria in
03:33:44 the NMES database because it's so large, I'm asking
03:33:46 you whether you have performed any sensitivity
03:33:48 analysis of the effects of changing your choice of

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03:33:54 control variables, the ones that you actually
03:33:58 employ? Did you run any sensitivity analysis of
03:33:58 that?
03:34:00 A. Well I mean in --
03:34:00 MR. McCARTER: I think I'm going to object
03:34:04 on vagueness. I think it's not clear which variables
03:34:06 you're talking about in which time that he employed
03:34:08 because there are different ones.
03:34:10 Q. I'm asking a little bit different question.
03:34:14 Have you performed any sensitivity analysis of the
03:34:18 effects of changing your choice of control variables?
03:34:20 A. The effects on the point estimates?
03:34:20 Q. Yeah.
03:34:24 A. Well I -- like I said, I've done some limited
03:34:28 checks that are reported here. For example, no
03:34:30 controls has no control variables, right.
03:34:32 Q. Right.
03:34:34 A. And therefore that is different than control set
03:34:36 1. Control set 2 has a different type of
03:34:40 stratification than control set 1.
03:34:42 Q. What is the different stratification?
03:34:52 A. The stratification in control set 1 is just by
03:34:54 age and gender, the stratification in control set 2
03:34:56 is by age, gender, and smoking status.
03:34:56 Q. All right. And have you performed any

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03:34:58 sensitivity analysis of the effect of changing the
03:35:02 classification; i.e., stratification criteria for
03:35:04 each variable; i.e., different ways of classifying,
03:35:06 for instance, educational level?
03:35:06 A. Not at this time.
03:35:08 Q. Did you do any analysis of any other control
03:35:10 sets like that?
03:35:14 A. Well, again, the -- again, if you go to my
03:35:22 second supplement, what I call control set 3 and 4,
03:35:26 to distinguish it, I think that's Exhibit 4, there I
03:35:28 have controls that weren't in the previous estimates
03:35:32 for insurance, whether or not you have private
03:35:36 insurance, and then I also am averaging over only
03:35:40 those with private insurance, so it's different than
03:35:44 the other reports so in that sense it is a
03:35:46 sensitivity analysis.
03:35:50 Q. What is a sensitivity analysis, Table 2 on
03:35:52 Exhibit 4?
03:35:56 A. Table 2, 3 and 4 are sort of a sensitivity
03:36:04 analysis of Tables -- where is that report -- 15, 16,
03:36:08 and 17, the difference being the controls for
03:36:08 insurance status.
03:36:10 Q. Well the question that I have though is whether
03:36:14 you performed a sensitivity analysis of the effects
03:36:16 of changing the classification criteria for each

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03:36:20 variable; i.e., for different ways of classifying
03:36:24 educational level, for the different ways of
03:36:26 classifying the other variables, have you performed a
03:36:30 sensitivity analysis for the effects of changing the
03:36:32 stratification criteria for each of those variables?
03:36:34 A. For each single variable?
03:36:34 Q. Yes.
03:36:36 A. Not for each single variable, no.
03:36:40 Q. Well, did you do any sensitivity analysis of the
03:36:40 other control sets?
03:36:44 MR. McCARTER: Objection; vague.
03:36:50 A. Well, again at this time I think I've reported
03:36:54 sensitivity analyses. What I did differed; I had
03:37:00 stratified differently in two cases and controlled
03:37:04 for insurance in one case and not in the other case.
03:37:06 Q. I understand what you've displayed. I'm asking
03:37:10 you what set of sensitivity analyses you did that is
03:37:14 not displayed. In other words, --
03:37:16 A. I may have done some previous estimates, I don't
03:37:18 recall the exact results, and I don't think I ever
03:37:22 got standard errors for any of the previous
03:37:22 estimates.
03:37:24 Q. I'm not asking whether you got standard errors,
03:37:28 I'm asking -- I mean that is included within what I
03:37:30 was asking, but it's not limited to it. I guess what

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03:37:36 I'm saying is you have displayed these results. Are
03:37:38 these the only results that you obtained in your --
03:37:44 is contained within 15, 16, 17 and Table 2, 3 and 4,
03:37:48 or did you run other either sensitivity analyses or
03:37:50 other runs of data changing the classification
03:37:54 criteria or changing the variables that you haven't
03:37:56 reported in this -- in this report?
03:38:00 A. I did some other various ones at some time. I
don't recall.
03:38:00 Q. Where are they?
03:38:06 A. I may have added variables because I wanted to
03:38:10 control for more so I just disregarded the -- the
03:38:10 previous ones.
03:38:12 Q. Where are they?
03:38:18 A. I didn't save them. I don't have them.
03:38:22 Q. So we don't know then how many other runs of
03:38:24 data that you did, other tables you've generated
03:38:26 except for the ones that you've displayed in this
03:38:28 chart; correct, in these charts?
03:38:32 A. I mean what I tried to do is control for as much
03:38:38 as possible and as a -- as a comparison just compare
03:38:42 the case where you don't control at all rather than
03:38:46 control for I mean every permutation, right, would,
03:38:52 you know, be pretty -- well you'd have a lot of runs
03:38:54 you'd have to do if you took every single

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03:38:56 permutation.
03:38:58 Q. But did you ever in any report say I performed
03:39:02 other runs that were discarded? I don't say that
03:39:02 anywhere in your report?
03:39:04 A. I don't believe I stated it in my report.
03:39:08 Q. And it's not in your computer program or the
03:39:10 disk that you've generated; correct?
03:39:10 A. No, it's just --
03:39:12 Q. All right.
03:39:14 A. -- the disks to generate these tables.
03:39:20 Q. Well if you did it, if you did these analyses --
03:39:22 let me just be very clear now. Did you do any
03:39:24 analyses where you used the same control sets but
03:39:30 different stratification criteria for the variables?
03:39:32 A. I don't recall any.
03:39:40 Q. Did -- all right. Well in the other runs of the
03:39:44 data, if you wanted to have displayed those in
03:39:46 tables, you could have done that; correct?
03:39:48 A. I could have, yes.
03:39:52 Q. The ones that you discarded. Okay.
03:39:54 What were your criteria for reporting the
03:40:00 results of only these analyses in Tables 15, 16 and
03:40:04 17 in Exhibit 2, and Tables 2, 3 and 4 of Exhibit 4?
03:40:08 A. Well I think the criteria was try to control as
03:40:14 completely as possible for confounding with the

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03:40:22 notion that -- that -- at least, you know, one
03:40:24 standard is that you want to try to control for as
03:40:28 many as possible, and what I did in some of the
03:40:30 earlier runs is maybe not code as much as I should
03:40:34 have. And then so I, you know, added in some other
03:40:38 variables to control for more, and so I think these
03:40:42 are the -- the models that end up controlling as
03:40:46 completely -- you know, I certainly could try adding
03:40:48 more, but at that time as completely as possible for
03:40:50 confounders, given the limitations of possible
03:40:56 controls in NMES, and you know, you kind of taking as
03:40:58 a guideline in a sense those typical estimates that
03:41:04 you had seen in other cases just as a way of showing
03:41:12 the sensitivity of the mortality ratio assumption. I
03:41:16 may have, you know, forgot to include one thing or
03:41:18 another at different runs, but that's why I presented
03:41:20 the ones with no controls as a comparison.
03:41:26 Q. Well, let me ask you this: If you had -- if you
03:41:30 had retained in some way, shape, or form the other
03:41:36 computer runs in tabulated form or table form that
03:41:40 you had discarded and had set forth the selection
03:41:46 criteria of or the stratification criteria for each
03:41:50 of those variables and each of those controls, we
03:41:52 would then be able to look at that to determine
03:41:56 whether the tables you presented differed materially

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03:42:00 than the other data in the tables you discarded; fair
03:42:02 enough? We could have done that if we wanted to?
03:42:06 MR. McCARTER: Objection; incomplete --
03:42:08 incomplete hypothetical.
03:42:10 A. If I presented every single run?
03:42:10 Q. Yes, or retained it.
03:42:14 A. Or retained it and then presented it.
03:42:14 Q. Yeah.
03:42:18 A. You -- if I retained it, you could have
03:42:22 compared. But again, most of the runs, in fact all
03:42:28 of them, fell below the no control set in my memory,
03:42:30 and then again I prefer to control for more than
03:42:38 less, worried about potential confounding, so what I
03:42:40 wanted to do was try to control for as much as
03:42:44 possible, but if you had those results you could look
03:42:44 at them, right.
03:42:54 Q. Does your analysis of NMES require -- Strike
03:42:54 that.
03:42:58 Does your analysis of NMES provide an analysis
03:43:00 of an individual's medical expenditure,
03:43:04 quote-unquote, "over time" as you state is required
03:43:06 on page 4 of your November 6th report?
03:43:10 A. Well, you have to go back and remember that the
03:43:20 purpose of these tables is not to show how a lifetime
03:43:22 analysis changes the results, but is really a

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03:43:26 sensitivity check of particular assumptions of Dement
03:43:30 and Roberts, kind of holding constant other problem,
03:43:34 and in particular, you know, what I'm checking is
03:43:38 let's hold fixed the fact that you're taking a
03:43:40 relative risk type of approach or prevalence
03:43:44 approach, let's then just simply change the
03:43:46 assumption or the method of using mortality versus
03:43:50 using expenditures. That's what the design of these
03:43:54 tables were. You know, I agree that using a lifetime
03:43:56 approach, looking at data over time, would have been
03:44:00 preferable, but that wasn't the point of these
03:44:04 sensitivity analyses. The NMES, you know, collects
03:44:08 data for a single year, but I mean that's what NMES
03:44:08 collects.

03:44:12 MR. WITHEY: All right. Move to strike as
03:44:12 nonresponsive.

03:44:16 Q. Let me direct your attention, just so you can be
03:44:20 clear on my question, to page 4, a sentence starting
03:44:20 "Finally".

03:44:24 A. Page 4 of the November 6 report I take it.

03:44:26 Q. I think it is, yeah.

03:44:26 A. Yeah.

03:44:28 Q. You see in the last paragraph about halfway down
03:44:30 the word "Finally" starts the sentence?

03:44:32 A. Right.

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03:44:34 Q. It says, "Finally, one would need to estimate
03:44:38 how these changes in smoking behavior would affect an
03:44:42 individual's medical expenditures over time, and, in
03:44:42 particular, how they would affect medical
03:44:46 expenditures covered by the Insurance Funds over
03:44:46 time."
03:44:46 Do you see that?
03:44:46 A. Yes.
03:44:50 Q. The question I'm asking you is whether -- and I
03:44:52 think the answer is no, but I need to verify it.
03:44:56 Does your analysis of NMES provide an analysis of an
03:44:58 individual's medical expenditure over time as it's
03:45:00 meant in this sentence?
03:45:04 A. Well that wasn't the point of the analysis I did
03:45:04 with NMES.
03:45:04 Q. Oh, all right.
03:45:08 A. But to answer your question, that wasn't what I
03:45:10 used it, my analysis doesn't do that, no.
03:45:14 Q. Thank you. So what you are doing with NMES is
03:45:16 comparing the annual expenditures of living smokers
03:45:18 and nonsmokers; correct?
03:45:28 A. Living -- I'm comparing the expenditures
03:45:34 summarized in NMES of smokers and nonsmokers.
03:45:36 Q. In a given year?
03:45:36 A. In the given year.

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03:45:38 Q. Correct?
03:45:40 A. But it's unclear whether some of those
03:45:42 individuals died within that year or not.
03:45:46 Q. All right. What you're doing with NMES is
03:45:48 comparing the expenditures in a given year of smokers
03:45:50 and nonsmokers; correct?
03:45:54 A. Controlling for all these factors and doing it
03:45:56 in the method I did, that was my goal simply since my
03:46:00 goal was to do a sensitivity check of certain
03:46:02 assumptions of the Plaintiffs' model.
03:46:06 Q. You state on page 14 of your report that when in
03:46:18 your view confounding is accounted for -- let me just
03:46:24 find the sentence so we don't get a misstatement.
03:47:18 I'm sorry. Page 13. You see where you have a
03:47:24 discussion down at the bottom of that page about
03:47:24 Tables 15 and 17 --
03:47:24 A. Yes.
03:47:26 Q. -- which display smoking-attributable fraction
03:47:30 estimates for expenditures for smoking-related
03:47:36 conditions when confounding is accounted for. Do you
03:47:36 see that?
03:47:36 A. Yes.
03:47:42 Q. Now when -- I believe you state on that page and
03:47:46 the next page that when confounding is accounted for
03:47:50 the SAFs for all but one of the five trust funds

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03:47:52 analyzed are negative; correct?
03:47:54 A. The point estimates are negative; correct.
03:47:58 Q. Yeah. And so we can agree when I refer to the
03:48:00 smoking-related diseases I mean the diseases
03:48:04 identified in the 1989 Surgeon General's report as
03:48:06 being associated with smoking. Okay. Do you
03:48:06 understand that definition?
03:48:08 A. Yes.
03:48:10 Q. All right. Is it your opinion then that fund
03:48:14 beneficiaries who smoke have lower expenditures for
03:48:18 smoking-related diseases than nonsmokers?
03:48:20 A. My opinion is that when I control for
03:48:26 confounding, the estimates dropped to these values,
03:48:28 that the point estimates change. That's really what
03:48:30 my opinion is from this.
03:48:32 Q. Well does it flow from your opinion that fund
03:48:36 beneficiaries who smoke have lower expenditures for
03:48:38 smoking-related diseases than nonsmokers?
03:48:38 A. Not necessarily.
03:48:42 Q. Well which ones are they -- in which ones are
03:48:46 the fund beneficiaries who smoke lower -- have lower
03:48:50 expenditures for smoking-related diseases than
03:48:52 nonsmokers and which ones are they about the same and
03:48:54 which ones are they higher, again in Table 15?
03:48:56 A. I need to look at it.

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03:49:00 Q. Well, 15, 16 and 17, I guess?
03:49:02 A. Again, what I'm saying here is that the point
03:49:06 estimates change when we control for confounding and
03:49:12 use expenditure data, and even when, you know, they
03:49:16 -- sometimes the point estimates go to negative, you
03:49:18 have to look also at the confidence intervals which
03:49:22 contain positive numbers, so we're unclear of -- of
03:49:24 whether or not, you know, there's -- they're positive
03:49:28 or negative, but one thing to notice is that the
03:49:30 upper bound of these confidence intervals tend to be
03:49:34 less than the lower bound of Dement and Roberts, so
03:49:38 that gives you some indication that perhaps they're
03:49:44 -- even their lower bounds are not conservative. So
03:49:46 I'm not saying that the -- the actual
03:49:50 smoking-attributable fraction is negative. I'm
03:49:54 saying this is what happens to my point estimates,
03:49:56 this is what happens to the confidence intervals when
03:50:02 you use expenditure data and control for confounding.
03:50:08 Q. Okay. So you're -- I take it then that even
03:50:12 though you have negative values in this Table, it's
03:50:14 still then not your opinion that fund beneficiaries
03:50:18 who smoke have lower expenditures for smoking-related
03:50:20 diseases than nonsmokers; is that correct?
03:50:22 A. I don't think I'm making a statement on whether
03:50:26 it's lower or higher. I'm saying that what I'm doing

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03:50:28 is checking -- making sort of a sensitivity check of
03:50:32 these assumptions in the model of Roberts and Dement.
03:50:36 Q. All right. Is it's your opinion that in these
03:50:38 populations smoking is negatively associated with
03:50:40 expenditures for smoking-related diseases?
03:50:44 A. My opinion is simply that when we estimate
03:50:50 models, statistical models using expenditure data
03:50:52 instead of mortality data and controlling for these
03:50:56 particular confounders in the way I controlled for
03:51:00 it, the point estimates are negative and the -- in
03:51:06 some cases and then the confidence intervals are, you
03:51:08 know, what I've stated, sometimes, in most cases,
03:51:14 contain both negative and positive value.
03:51:16 MR. WITHEY: I want to move to strike as
03:51:18 nonresponsive.
03:51:22 Q. What you've done, Doctor, is repeat what -- what
03:51:24 you've done and what your opinions are based upon
03:51:28 these tables. I'm asking you a different question as
03:51:30 to whether you have a further opinion, and I'd like
03:51:32 you to say, Yes, I have that opinion, or No, I don't
03:51:34 have that opinion, if you can answer it that way.
03:51:36 MR. McCARTER: You don't have to say yes or
03:51:38 no, just --
03:51:42 Q. No, it's not yes or no, you don't have to answer
03:51:44 the question yes or no, but I need to know if you've

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03:51:46 reached any further opinions other than the values
03:51:50 stated in this -- in this table, and I'm entitled to
03:51:52 ask that question because we need to know what your
03:51:54 opinions are. And if you have not reached that
03:51:56 opinion, then it's fine to say, No, I have not
03:52:00 reached that opinion and either I haven't considered
03:52:02 it or I don't believe that to be true, but if you
03:52:04 could focus on my question so that I'll know whether
03:52:08 you have an opinion on this or not. I understand now
03:52:14 you've testified here's what these numbers are on
03:52:18 these tables and here's why I did it. Now I'm going
03:52:22 to ask you -- I'm going to ask you to go beyond that
03:52:24 if you can. If you can't, fine, it's all right.
03:52:26 The question is: Have you reached the opinion
03:52:30 that in these populations smoking is negatively
03:52:32 associated with expenditures for smoking-related
03:52:34 diseases?
03:52:36 A. In the populations for the trust funds?
03:52:36 Q. Yeah.
03:52:38 A. I haven't reached that -- that opinion.
03:52:40 Q. All right. Is it your opinion that smoking
03:52:44 decreases the incidence of disease that the Surgeon
03:52:50 General has termed smoking-related?
03:52:50 A. That is not my opinion.
03:52:54 Q. Is it your opinion that but for smoking the

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03:52:56 expenditures of the trust funds in this case would
03:52:58 have been higher than they actually were?
03:53:02 A. Again, my opinions revolve around the
03:53:06 estimations of Dement and Roberts, not around that
03:53:08 question, so that is not my opinion.
03:53:10 Q. Not your opinion. So you have no way, as I
03:53:12 understand it, of knowing what would have happened to
03:53:16 expenditures for smoking-related diseases if
03:53:18 hypothetically no one had smoked; correct?
03:53:18 A. Again my --
03:53:20 MR. McCARTER: Objection. Go ahead.
03:53:24 A. My task or what was asked of me was to evaluate
03:53:30 the Dement and Roberts approach and comment on the
03:53:32 statistical properties of that approach. I was not
03:53:38 asked to go about trying to get estimates myself.
03:53:40 Q. So by the nature of your analysis it's your
03:53:46 opinion -- your analysis is incapable of providing an
03:53:48 answer to the question: What would the trust fund
03:53:50 expenditures have been if no one had smoked; correct?
03:53:54 A. Yeah, again my -- my analysis was designed to
03:53:58 check the reliability and validity. I think other
03:54:02 experts may be for the defense tackling that
03:54:06 question, but simply here these tables are sort of
03:54:08 sensitivity checks of those particular assumptions,
03:54:12 confounding -- you know, controlling for confounding

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03:54:14 and expenditures made by Roberts and Dement.
03:54:16 MR. WITHEY: All right. Move to strike as
03:54:18 nonresponsive.
03:54:20 Q. You have not provided your analysis in this case
03:54:24 to answer the question, quote, "What would the trust
03:54:28 funds expenditures have been had no one smoked?"
Correct?
03:54:30 A. I was not asked to do that so --
03:54:30 Q. And you did not do that?
03:54:32 A. And I did not do that.
03:54:36 Q. Thank you. So as far as you know had it not
03:54:40 been for smoking, the expenditures for smokers would
03:54:42 have been even lower had those same people not
03:54:42 smoked; correct?
03:54:44 MR. McCARTER: Could you repeat the
question?
03:54:50 Q. Sure. As far as you know that but for smoking
03:54:52 the medical expenditures for smoking would have been
03:54:56 even lower had those people not smoked; correct?
03:55:00 A. Again, my -- my charge was to comment whether
03:55:06 the Dement and Roberts approach or estimates help us
03:55:08 answer that question, but I was not asked to answer
03:55:08 that question.
03:55:10 Q. And thus did not?
03:55:20 A. Did not.

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03:55:32 Q. By the way, just going back to a question about
03:55:36 the NMES survey, what -- how was it determined what
03:55:38 disease the study participant was being treated for,
03:55:40 if you know?
03:55:46 MR. McCARTER: Are you -- I just want to
03:55:48 clarify something. Are you referring to the survey
03:55:50 itself or looking in the data?
03:55:52 MR. WITHEY: Well either.
03:55:54 Q. Is it determined in either the survey itself or
03:55:56 -- or just looking at the data --
03:55:58 A. Associated --
03:56:00 Q. -- what disease the study participant was being
03:56:02 treated for at the time they had --
03:56:06 A. There's data on ICD-9 codes in the data.
03:56:12 Q. All right. Was the ICD-9 codes used for all of
03:56:12 the study participants?
03:56:18 A. I believe the ones -- now I don't know, I can't
03:56:22 recall the extent of missing values, but for the ones
03:56:26 that had expenditures of some sort, they would code
03:56:30 along with it an ICD-9 code.
03:56:34 Q. Well, then for some subset of the NMES data
03:56:38 there was ICD-9 codes, but obviously for others --
03:56:40 A. Well if I never went --
03:56:44 Q. -- the missing data problem presented itself and
03:56:46 there wasn't ICD-9 codes?

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03:56:48 A. I don't know the extent of that problem.
03:56:50 Q. Well would it matter?
03:56:56 A. Again, I haven't checked how it might affect the
03:56:58 particular analysis that I did.
03:57:00 Q. Have you asked Professor Rubin or any other
03:57:06 professor of statistics whether it's proper in doing
03:57:10 an analysis as you've done of the NMES data set to
03:57:22 exclude results where missing data is -- where
03:57:28 missing data presents itself, as opposed to imputing
03:57:28 data?
03:57:36 A. I -- other than speaking briefly with Dr. Rubin
03:57:40 once at the Minnesota trial, I have not talked to Dr.
Rubin.
03:57:44 Q. Have you asked any other, you know, professor or
03:57:48 statistician or expert in statistics, whether what
03:57:52 you did in analyzing this data set was proper
03:57:52 methodology?
03:57:56 A. I haven't talked with -- concerning this case I
03:57:58 haven't spoken with other statisticians.
03:58:06 Q. Have you compared the results that you obtained
03:58:10 in basically deleting where there is missing data as
03:58:14 you described it versus imputing data as per either
03:58:18 NMES or as per some other method of imputing data?
03:58:20 A. Not at this time, no.
03:58:24 Q. Would that -- well what authority then either in

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03:58:30 the statistical literature do you claim for the
03:58:38 appropriateness of using a methodology of deleting
03:58:40 data where the missing data presents itself?
03:58:46 A. You mean is that ever done?
03:58:48 Q. Has it been reported in the literature to be
03:58:50 something that's appropriate to do?
03:58:54 A. I think under certain assumptions it's
appropriate.
03:58:58 Q. Where in the literature is it reported to be?
03:59:00 A. Well, I can't recall off the top of my head.
03:59:02 Q. Well that's what I'm asking you?
03:59:10 A. Oh, you would want to look at, you know,
03:59:12 statistics books dealing with missing data.
03:59:14 Q. What was the -- what was the -- have you looked
03:59:16 at the literature on how -- on the appropriate
03:59:18 handling of missing data for your purposes in
03:59:20 testifying in tobacco trials or giving reports?
03:59:26 A. Not at this time. I -- I believe that was left
03:59:28 to some other experts.
03:59:30 Q. Did you ask Professor Rubin in this case or in
03:59:34 the Northwest Laborers case whether it was
03:59:38 appropriate to do what you did in analyzing the NMES
03:59:38 data?
03:59:40 A. I haven't talked --
03:59:40 MR. McCARTER: Asked and answered.

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03:59:44 A. -- with Dr. Rubin other than small talk during
03:59:44 the Minnesota trial.
03:59:48 Q. Did you gain the impression at least in either
03:59:52 talking to counsel for the tobacco industry or the
03:59:54 brief interchange you had with Professor Rubin that
03:59:58 -- that your method was appropriate?
04:00:02 MR. McCARTER: Objection; vague.
04:00:04 MR. WITHEY: I'll withdraw the question.
04:00:08 Q. Describe in greater detail, if you could, Dr.
04:00:12 McCall, what deletions in the NMES data you made for
04:00:16 missing data? And maybe --
04:00:20 MR. McCARTER: I think we covered this a
04:00:22 bit in Northwest Laborers' deposition.
04:00:24 MR. WITHEY: I know, but this is something
04:00:26 that has come up since we deposed Rubin, so I want to
04:00:30 ask some questions along these lines.
04:00:32 Q. If you can describe it.
04:00:34 MR. McCARTER: Oh, I'm sorry. Go ahead and
04:00:34 answer.
04:00:36 Q. Go ahead.
04:00:44 A. Well in my code essentially if you -- and I
04:00:46 don't have the exact numbers, so I haven't calculated
04:00:50 the fractions, because a lot of times when you, you
04:00:54 know, say if you're missing then delete, it depends
04:00:58 on the order in which you delete it to determine the

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04:00:58 fractions.
04:00:58 Q. Right.
04:01:02 A. Okay. Because if everybody who is missing one
04:01:06 data point is missing the other, but not vice versa,
04:01:08 then the order could matter, so --
04:01:08 Q. Oh, sure.
04:01:12 A. -- I haven't checked that -- you know, which --
04:01:14 what the relative fractions of missing data were for
04:01:16 these variables.
04:01:18 Q. Maybe a better way of asking the question is:
04:01:20 What instructions did you give the computer to delete
04:01:22 where missing data exists?
04:01:24 A. "If missing, then delete".
04:01:28 Q. If missing data as to any --
04:01:30 A. Like a negative value. You know, typically the
04:01:36 NMES -- make sure that -- there's some values in NMES
04:01:40 which are associated with missing data, you know,
04:01:44 minus numbers like minus 9 or something, and so you
04:01:44 know if it's that value --
04:01:46 Q. Then delete the entire --
04:01:48 A. Observation.
04:01:52 Q. For all data entry points for that person;
correct?
04:01:52 A. For the person.
04:01:56 Q. And you understand that the missing data came in

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04:01:58 part because of a low response rate; correct?
04:02:00 A. Potentially. I mean certainly for --
04:02:02 Q. What was it?
04:02:02 A. Well I mean yeah.
04:02:04 Q. It's one of the questions -- I think I may have
04:02:08 asked you, but what was the response rate to
04:02:10 determine the -- for instance, to determine the
04:02:12 verification of the disease classifications?
04:02:14 A. I don't recall.
04:02:16 Q. Do you know how it was done?
04:02:20 A. Not exactly, no.
04:02:28 Q. What was the percentage -- out of the 38,000
04:02:30 individuals that were interviewed, how many of them
04:02:32 were 35 or above?
04:02:42 A. I could get that number easily, but I just don't
04:02:46 remember off the top of my head. I'm guessing
04:02:48 roughly 50 percent, but that's a guess.
04:02:52 Q. Well that would take us down to around 19,000
04:02:54 approximately?
04:02:54 A. Right.
04:02:56 Q. And then you said that the total number was
04:02:58 around, what was it, 13,000?
04:02:58 A. Right.
04:03:02 Q. So approximately 6000, again, rough numbers,
04:03:04 6000 were deleted because of missing data then;

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correct?
A. Somewhere in that range. I don't know which variables was causing the majority of those.
Q. And -- and I assume that that was the same instructions you gave the computer to generate the tables in the Northwest Laborers case, again so I don't have to ask you all those questions?
A. Basically, yeah.
Q. Well was there any difference? Did you modify the -- either the manner of deriving subsets from the NMES data or any of the classifications or stratifications?
A. I don't think so -- I don't think so, no.
Q. Now do you know how it was determined in NMES that a study participant was diagnosed and/or treated for a smoking-related disease?
A. Treated for versus --
Q. Diagnosed.
A. -- had expenditures for?
Q. Fair enough.
A. The data I looked at was the expenditure data so there is these files for types of expenditures, and for each expenditure type for an individual or expenditure incident they code an ICD-9 so I just then took the ICD-9s from the Surgeon General's

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04:04:38 report.
04:04:42 Q. The same way John Dement did; right?
04:04:44 A. Like I said, since I was trying to only check
04:04:48 certain aspects of this model with this, I tried to
04:04:50 maintain the other assumptions as best I could so I
04:04:54 could see how big of an effect those particular
04:04:56 assumptions had on the estimates.
04:04:58 Q. Now you have not analyzed NMES to determine the
04:05:00 strength of the association between smoking status
04:05:04 and the reported treatment for smoking-related
04:05:04 diseases; correct?
04:05:06 A. I haven't looked at that.
04:05:12 Q. And I think I may have asked you this before but
04:05:16 wouldn't that be a check, a check that the -- to
04:05:20 determine whether the NMES study was consistent with
04:05:22 other studies that have found such an association?
04:05:24 MR. McCARTER: I'm going to object on the
04:05:28 grounds that it's an incomplete hypothetical.
04:05:38 A. So I guess it would depend -- you'd have to
04:05:42 define for me what -- what you mean with regard to
04:05:46 the -- the disease and which studies I guess.
04:05:50 Q. Well you -- you have said that you used the
04:05:50 ICD-9 --
04:05:52 A. On expenditures.
04:05:54 Q. -- classification on expenditures; right? And

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04:05:58 you understood the ICD-9 refers to diseases; right?
04:05:58 A. Yes.
04:06:02 Q. And the diseases are those that are mentioned in
04:06:04 the Surgeon General's report as having been
04:06:06 associated with smoking, those are the ones you
04:06:06 selected; correct?
04:06:06 A. Correct.
04:06:10 Q. And in the Surgeon General's report that
04:06:12 identified the diseases associated with smoking, the
04:06:16 Surgeon General gives relative risk estimates for
04:06:18 each of those diseases for men, women, and uses
04:06:20 various categories; correct?
04:06:24 A. But they're -- the way they get the relative
04:06:26 risks are based on mortality and are over a different
04:06:28 time interval.
04:06:30 Q. I'm just asking whether they have relative risks
04:06:34 for those diseases that are identified in the Surgeon
04:06:36 General's report by --
04:06:38 A. There are relative risk estimates in the Surgeon
04:06:40 General's report.
04:06:42 Q. Yeah. And you don't understand what those are,
04:06:44 what the relative risk estimates are?
04:06:46 A. No, I know what they are. I'm just --
04:06:48 Q. What are they?
04:06:50 A. It's the risk of -- or essentially the fraction

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04:06:54 of people who have a disease who -- who, you know, --
04:06:58 who smoke, this is just a general example, versus
04:07:02 those who don't smoke, so it's a ratio.
04:07:06 Q. Okay. So the ratio exists as a relative risk is
04:07:10 that they compare people who smoke versus those who
04:07:12 don't smoke and the incidence of the mortality?
04:07:16 A. It's an incidence, yeah, for mortality over a
04:07:16 certain time line.
04:07:18 Q. And you've seen those tables in the Surgeon
04:07:20 General's report, I assume; right?
04:07:20 A. Yes, I have seen them.
04:07:24 Q. And they have numerical values attached to each
04:07:26 disease by a whole number of things, including age
04:07:28 and gender; correct?
04:07:28 A. Yes.
04:07:40 Q. And would you be able to, had you chosen to,
04:07:50 perform an analysis to see if the strength of
04:07:54 association observed in the Surgeon General's report
04:08:02 between smoking status and diseases corresponded to a
04:08:06 determination of the strength of the association
04:08:10 between smoking status in NMES and either diseases or
04:08:10 expenditures?
04:08:14 MR. McCARTER: Objection; vague.
04:08:18 A. Well, I don't know how --
04:08:22 Q. Could you have done it if you wanted to?

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04:08:24 A. Again, whether it makes sense to compare those
04:08:28 two and make any -- any, you know, -- infer anything
04:08:32 from those, given the differences in the data and the
04:08:34 mortality versus expenditures, I don't know if I'd
04:08:36 want to do that, but I haven't done that. And I -- I
--
04:08:38 Q. I'm just asking whether you could do it if you
04:08:40 wanted to?
04:08:40 A. For mortality or for --
04:08:42 Q. For either.
04:08:46 A. I potentially could do that.
04:08:58 Q. Okay. Now on page 4 of the November 6 report,
04:09:04 paragraph 2 you describe an appropriate approach.
04:09:04 Do you see that?
04:09:10 A. Yes.
04:09:14 Q. That is your opinion that this would be an
04:09:16 appropriate approach as described in this paragraph;
correct?
04:09:18 A. Correct.
04:09:22 Q. Okay. Now have you made any attempt to
04:09:30 determine how long, how much time it would take to
04:09:32 perform such an approach?
04:09:38 A. Time or money?
04:09:38 Q. Both.
04:09:44 A. Well I mean you would have to get data of

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04:09:48 expenditures over time, which presumably you have the
04:09:52 data on the expenditures in the trust funds, but I
04:09:54 guess the problem would be trying to collect
04:09:58 additional information on smoking and other behaviors
04:10:00 among the trust fund members. I don't know. You
04:10:04 know, I haven't made a determination of the exact
04:10:10 time it would take to collect that data and to the
04:10:10 exact costs, no.
04:10:12 Q. Have you made any effort to determine what set
04:10:16 of criteria you would use for questions of the -- as
04:10:24 you put it, every smoker in each birth cohort of the
04:10:26 question had the Defendants not engaged in the
04:10:32 alleged wrongful conduct what effect that would have;
04:10:34 in other words, what questions would you ask about
04:10:36 the Defendants' misconduct in that survey?
04:10:38 A. I wasn't asked to do that, so I haven't
04:10:40 explicitly considered it.
04:10:42 Q. Have you considered how long it would take to do
04:10:42 such a survey?
04:10:44 A. Well since I wasn't asked for me to do it, I
04:10:46 didn't worry about how long it would take.
04:10:48 Q. So you've postulated an appropriate approach,
04:10:50 but you have not been asked to do that approach;
04:10:50 correct?
04:10:52 A. Correct.

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04:10:54 Q. And you have not thought through how long it
04:10:56 would take, how much money it would take, or what
04:10:58 kinds questions to ask; correct?
04:10:58 A. Not in detail, no.
04:11:02 Q. Well have you done it in any level other than
04:11:04 what's stated in this paragraph -- well in this
04:11:06 report I should say? Because this is the level of
04:11:10 detail you've reached, nothing beyond that?
04:11:12 A. Nothing much more than that, no.
04:11:18 Q. Do you know how many beneficiaries there are in
04:11:22 the -- in the class of trust funds involved in this
04:11:22 case?
04:11:30 A. I've seen some of the data, but most of my
04:11:32 recollections have to do with sort of ballpark
04:11:38 figures for the total expenditures rather than
04:11:38 numbers of people.
04:11:40 Q. Do you have any idea how many numbers of people
04:11:40 or --
04:11:42 A. Not off the top of my head, but it's certainly
04:11:44 in the thousands.
04:11:46 Q. Well it's actually in the hundreds of thousands,
04:11:48 isn't it?
04:11:50 A. Well that's the thousands only it's the hundreds
04:11:50 of thousands.
04:11:54 Q. Well, okay. Well, on the order of magnitude

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04:11:58 it's more than thousands, it's hundreds of thousands,
04:11:58 is that your understanding, of people?
04:12:02 A. It certainly could be. I only saw more the cost
04:12:04 data rather than the numbers data. I have that, but
04:12:06 I haven't looked at it.
04:12:08 Q. And the cost data is in the hundreds -- hundreds
04:12:10 of millions; correct?
04:12:10 A. Right.
04:12:12 Q. So have you yourself ever considered how long it
04:12:16 would take to perform a survey that would ask the
04:12:20 appropriate questions in your view of every smoker in
04:12:22 this birth cohort?
04:12:26 A. Well I wouldn't need to ask -- again if I did
04:12:30 proper sampling techniques doesn't mean I necessarily
04:12:30 have to ask everybody.
04:12:34 Q. Okay. Well have you determined -- I'm asking
04:12:36 have you determined how long it would take?
04:12:40 A. No, I haven't determined how long it would take.
04:13:30 Q. Now let me direct your attention to pages --
04:13:34 well, I'm going to ask you some questions generally
04:13:40 about the opinions and statements you make on pages 7
04:13:48 through 9, 10. I assume -- do you understand the
04:13:48 concept of latency?
04:13:54 A. I have a general understanding.
04:13:56 Q. If all beneficiaries in this population were to

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04:13:58 stop smoking right now, would you expect the
04:14:02 smoking-attributable expenditures would immediately
04:14:02 drop to zero?
04:14:08 MR. McCARTER: This also was covered in the
04:14:08 other one.
04:14:08 MR. WITHEY: Yeah.
04:14:16 A. Assuming what? I mean assuming there is
04:14:18 expenditures? I guess I --
04:14:20 Q. Yes. Assuming there's expenditures, but I'm
04:14:24 saying do you have an understanding that if every
04:14:26 single beneficiary who smokes in the relevant
04:14:30 population in this case stopped today, do you
04:14:34 understand there would still be expenditures for
04:14:42 smoking-related diseases into the future?
04:14:46 If it's beyond your expertise, that's fine.
04:14:50 A. No, all I'm saying is that given your definition
04:14:52 that I'm almost positive that whether or not they
04:14:58 smoked, stopped smoking, or did whatever, there would
04:15:00 be expenditures in the future for smoking-related
04:15:04 diseases among people who either smoked or didn't
04:15:04 smoke.
04:15:08 Q. Well I'm -- I didn't say smoking-related
04:15:12 diseases, I used the term "smoking-attributable
04:15:14 expenditure". Do you understand what that term
04:15:16 means?

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04:15:18 A. Well I think in your second statement you said diseases, but I'm --

04:15:18 Q. Well, I'm sorry. I misspoke then. If all

04:15:22 beneficiaries who smoked were to stop smoking today,

04:15:24 would you expect smoking-attributable expenditures

04:15:28 would drop immediately to zero out into the future or

04:15:30 would there still be expenditures?

04:15:34 MR. McCARTER: This is under the assumption

04:15:36 that there are smoking-attributable expenditures

04:15:36 today.

04:15:38 MR. WITHEY: No, the assumption that there

04:15:38 are smokers today.

04:15:40 MR. McCARTER: You used the word

04:15:44 "continue," meaning the assumption -- there's an assumption in there.

04:15:44 MR. WITHEY: No. All right.

04:15:46 Q. If all beneficiaries who smoked were to stop

04:15:50 smoking today and none of the beneficiaries were to

04:15:52 start smoking in the future, would you expect

04:15:54 smoking-attributable expenditures would immediately

04:15:56 drop to zero?

04:15:58 MR. McCARTER: Assumes facts not in

04:16:00 evidence.

04:16:18 A. Assuming they're again smoking-attributable

04:16:22 expenditures, I wouldn't necessarily expect it to

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04:16:24 immediately drop to zero.

04:16:26 Q. How far into the future would the trust funds

04:16:30 still be incurring smoking-attributable expenditures?

04:16:32 MR. McCARTER: Same objection.

04:16:34 Q. Again, assuming that everybody in the trust

04:16:38 funds stopped smoking today, given the latency period

04:16:38 of those diseases?

04:16:46 A. I guess in terms of the actual length, I would

04:16:50 merely be speculating.

04:16:54 Q. You'd defer to an epidemiologist about the

04:16:56 latency period of the diseases caused by smoking?

04:17:02 A. Or medical doctor or other --

04:17:04 Q. Or healthcare economist?

04:17:04 A. I don't know about healthcare economist, but

04:17:06 medical doctor.

04:17:08 Somebody who has looked at that issue in more

04:17:08 detail.

04:17:10 Q. You're not prepared to testify about how long

04:17:16 they would continue in that hypothetical; correct?

04:17:18 MR. WITHEY: I'll withdraw the question.

04:17:20 A. In that hypothetical?

04:17:20 MR. WITHEY: I'm withdrawing the question.

04:17:24 MR. McCARTER: There's no question. He

04:17:34 withdrew.

04:17:38 Q. Am I correct that the point of Tables 13 and 14

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04:17:40 of your November 6 report is that there are
04:17:42 differences between the trust fund populations and
04:17:46 the CPS II populations with respect to education?
04:17:50 A. I guess my more general point was that there are
04:17:52 differences along a number of dimensions, and I was
04:17:54 just illustrating it with the education.
04:17:58 Q. Are you saying that education changes a smoker's
04:18:00 risk of developing a smoking-related disease relative
04:18:04 to that of a nonsmoker with the same education level,
04:18:08 or is that an issue for epidemiologists?
04:18:08 MR. McCARTER: Objection; vague.
04:18:10 A. Repeat the question, please.
04:18:14 Q. Are you saying that education changes a smoker's
04:18:16 risk of developing a smoking-related disease relative
04:18:20 to that of a nonsmoker of the same educational level?
04:18:22 MR. McCARTER: Same objection.
04:18:30 A. I'm saying that in this case that from a
04:18:32 statistical standpoint it's important to compare
04:18:38 populations that are similar when making inferences,
04:18:42 and I was just pointing out differences between the
04:18:48 CPS population and the trust fund population with
04:18:50 respect to, in this particular table, education.
04:18:52 Q. So I take it then as an economist you don't
04:18:56 profess expertise bearing upon the question of what
04:19:00 differences among populations have -- what

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04:19:02 differences have a material effect on the causation
04:19:06 of diseases in those populations; fair enough?
04:19:08 MR. McCARTER: Objection; vague.
04:19:10 A. Well, I have expertise in -- in, and I've
04:19:14 studied, you know, differences and characteristics
04:19:16 and how they affect behavior. I haven't particularly
04:19:18 looked at diseases.
04:19:22 Q. Well, the question then is: I take it then as
04:19:24 an economist you're not making the claim that
04:19:30 education per se changes a smoker or nonsmoker's risk
04:19:32 of developing a disease, correct?
04:19:38 MR. McCARTER: Same objection.
04:19:40 A. I'm saying that here that there are several
04:19:44 potential variables that may be related to smoking
04:19:48 which may also be related to expenditures and in this
04:19:50 case expenditures for certain types of conditions
04:19:56 that need to be accounted for and which, if not
04:20:00 properly controlled for, or if you're using the wrong
04:20:06 population to make inferences, might lead to biased
04:20:06 estimates or invalid estimates.
04:20:08 MR. WITHEY: I'm going to move to strike as
04:20:10 nonresponsive.
04:20:12 Q. We're back to the problem, Doctor, of you're
04:20:14 wanting to say what it is you are saying in your
04:20:18 opinions, and I'm asking you beyond that whether

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04:20:20 there's some additional opinions you have, and if you
04:20:22 could focus on what I'm asking you and if I could get
04:20:26 an answer that either, No, I've reached no such
04:20:28 opinion, or I haven't considered that, or Yes, I
04:20:32 believe that to be true as to the question I asked,
04:20:32 I'd appreciate it.
04:20:34 The question I have is: Based on your
04:20:38 background training as an economist and
04:20:42 econometrician, is it your expert opinion that
04:20:44 education, greater education changes a smoker's risk
04:20:48 of developing a smoking-related disease above that or
04:20:52 different than that of a nonsmoker of the same
04:20:54 education level?
04:20:56 MR. McCARTER: Same objection.
04:21:10 A. Education -- again, I'm not considering that
04:21:12 explicitly in my study.
04:21:14 Q. Okay. In other words, you're not of the opinion
04:21:18 that education causes any diseases; correct?
04:21:22 A. Again, I -- it's not the purpose of my study and
04:21:24 I'm not explicitly saying that.
04:22:08 Q. Okay. Let me ask you if you agree with this as
04:22:12 a general proposition: If an analytical method
04:22:14 produces a result known to be wrong, then there is
04:22:18 something wrong with that analytical method?
04:22:20 MR. McCARTER: Objection; asked and

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04:22:24 answered from Northwest Laborers. Verbatim.
04:22:28 Q. Go ahead.
04:22:38 A. If an analytical result is known to be wrong --
04:22:40 Q. No.
04:22:40 A. What was the question again?
04:22:44 Q. If an analytical method produces a result known
04:22:46 to be wrong, then there's something wrong with the
04:22:48 analytical method?
04:22:54 MR. McCARTER: Objection; incomplete
04:22:54 hypothetical.
04:23:02 A. So you're assuming you know with 100 percent
04:23:04 confidence in the exact answer for something?
04:23:04 Q. Yes.
04:23:10 A. With no uncertainty?
04:23:10 Q. Yes.
04:23:16 A. And a result, analytical result --
04:23:20 Q. Analytical method produces that result known to
04:23:22 be wrong to 100 percent certainty, would you conclude
04:23:26 that there is something about the analytical method
04:23:30 that is wrong or unreliable or invalid?
04:23:32 MR. McCARTER: Same objection.
04:23:36 A. Again, under very, very --
04:23:36 Q. Yeah, very fundamental.
04:23:40 A. -- restrictive assumptions about what you mean
04:23:46 by "knowing" to be that, it certainly would at least

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04:23:56 raise a red flag that that method might --
04:23:58 Q. Right.
04:24:00 A. -- may not be suited for that particular
04:24:04 purpose, but again I'd have to know more explicitly
04:24:04 in detail.
04:24:10 Q. Have you ever yourself undertaken to determine
04:24:12 whether a particular analytical method can at least
04:24:18 to some degree be judged by the reasonableness of the
04:24:18 output?
04:24:20 MR. McCARTER: Same objections.
04:24:34 A. Well in my field, the -- the problem we have is
04:24:38 that the -- you know, in many statistical studies
04:24:44 there is this issue of the -- you don't know what the
04:24:46 reasonableness of the output is, and so what we
04:24:50 typically do instead is try to carefully model
04:24:58 whatever we're studying because in many cases there's
04:25:02 a lot of uncertainty regarding the -- the result. If
04:25:04 there was no uncertainty, typically we wouldn't do
04:25:08 that study. And if I knew the answer, why would I do
04:25:10 a study?
04:25:12 Q. Well, my question was: Have you ever undertaken
04:25:18 an effort to determine whether a particular
04:25:26 analytical method is or is not valid based upon the
04:25:30 reasonableness of the output that comes out of that?
04:25:30 A. I can't recall any.

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04:26:16 Q. Now on page -- going back to Table 15 of your --
04:26:20 you use the term "smoking-related condition" in the
04:26:22 title of that table; correct?
04:26:22 A. Correct.
04:26:26 Q. And you also use the term "smoking-attributable
04:26:28 fractions"; correct?
04:26:28 A. Correct.
04:26:30 Q. What do you mean by the term
04:26:30 "smoking-attributable"?
04:26:42 A. In terms of the "smoking-attributable
04:26:44 fraction"?
04:26:46 Q. Yes, but I'm asking about the term
04:26:46 "smoking-attributable".
04:26:48 A. Not the "smoking-related".
04:26:52 Q. Well I'm going to ask about that, but let's
04:26:54 focus on my question. You've estimated
04:26:58 smoking-attributable fractions, so the question is:
04:27:02 In that phrase what does "smoking-attributable mean"?
04:27:04 A. Again I'm using sort of the standard phraseology
04:27:06 or whatever you want to call it that typically
04:27:14 applies to statistical methods where they've, you
04:27:20 know, estimated models of costs on a bunch of
04:27:22 variables in smoking and then from that tried to
04:27:30 ascertain potentially again what fraction of those
04:27:38 medical costs are they may use the word due to

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04:27:42 smoking, whether or not it's -- you can imply
04:27:46 causation in a regression, but trying to measure that
04:27:46 fraction.
04:27:48 Q. The fraction of expenditures that are
04:27:50 attributable to smoking?
04:27:52 A. Right.
04:27:54 Q. And is there a difference between
04:27:56 "smoking-attributable" and "smoking-related"?
04:28:00 A. For smoking-related what I meant by that was
04:28:04 simply taking -- again I wanted to use this analysis
04:28:08 as a sensitivity analysis of Dement and Roberts
04:28:14 approach, took what they defined as smoking-related
04:28:18 conditions which they took from the Surgeon General
04:28:22 reports, so those ICD-9's, expenditures for those
04:28:24 type of ICD-9 codes.
04:28:44 Q. Now in your January 22nd report, as I understand
04:28:56 it, you do not compare all expenditures for medical
04:29:00 care, including nursing home, institutionalized care,
04:29:04 prescription drugs, et cetera, between smokers and
04:29:08 nonsmokers, that is not what is featured in either
04:29:12 Table 2, 3, or 4; correct?
04:29:14 MR. McCARTER: Objection, compound.
04:29:18 A. Again, Tables 2, 3 and 4 were another
04:29:24 sensitivity check of the Dement and Roberts approach
04:29:30 who also just focused on those conditions stated in

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04:29:32 the Surgeon General's report, so those are what I did
04:29:36 because I was trying to again do another sensitivity
04:29:42 check and show what the effects of using expenditure
04:29:44 data rather than mortality data in controlling for
04:29:46 confounding had on these estimates.
04:29:48 Q. Well you understood that in Minnesota the NMES
04:29:54 data set was used by the Plaintiffs' experts, Wyant
04:29:58 and Dr. Samet I think they were, to describe the
04:30:02 difference in healthcare -- in medical care
04:30:06 expenditures in a number of different categories
04:30:08 between smokers and nonsmokers?
04:30:10 A. They used it for that purpose.
04:30:14 Q. It wasn't limited just to the ICD-9 diseases;
04:30:14 correct?
04:30:16 A. Their analysis wasn't, no.
04:30:18 Q. Right. For instance, if smokers get more colds
04:30:22 and go in for medical treatment for colds, that would
04:30:24 be something that might have been captured in the
04:30:28 Minnesota AG's damage model but certainly wouldn't be
04:30:32 reflected in the Dement/Roberts model; correct?
04:30:38 A. They were looking at all medical costs, other --
04:30:42 including these "smoking-related condition ICD-9s,"
04:30:44 quote-unquote.
04:30:46 Q. Right, but again, in my example all medical
04:30:50 costs of smokers versus nonsmokers might include

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04:30:54 someone going in for a cold if smokers had more colds
04:30:56 hypothetically, but that wouldn't be anything that
04:31:02 John Dement or Stan Roberts or Dr. Harris would count
04:31:04 in the damage model in this case; correct?
04:31:04 A. Dr. Harris?
04:31:06 Q. Yes.
04:31:08 A. Well he does some analyses that are essentially
04:31:08 looking at everything.
04:31:12 Q. Well but not -- but not -- all right. Let me
04:31:14 just limit it to Dement and Roberts then?
04:31:20 A. Yeah, I think they're explicitly looking at
04:31:24 those sorts of expenditures, although there's some,
04:31:28 you know -- I forget -- they do something where they
04:31:32 don't have all the codes for like prescriptions or
04:31:34 there's some allocation, but other than that I mean
04:31:36 they're trying to focus on those.
04:31:40 Q. Right. In other words, the Dement and Roberts
04:31:46 damage model looks at disease specific expenditures
04:31:50 that are according to the literature in general
04:31:54 related to smoking diseases; correct?
04:31:56 A. Looks at diseases in -- according to those
04:32:02 ICD-9s that they specify, expenditures for those
04:32:02 types of conditions.
04:32:08 Q. Right. And the common cold is not listed as one
04:32:10 of the diseases that the Surgeon General has

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04:32:10 attributed to smoking; correct?
04:32:12 A. Correct.
04:32:14 Q. And therefore whatever expenditures in this
04:32:16 population in Ohio in the trust funds' population had
04:32:18 for colds, that would not be counted as part of the
04:32:20 damages in this case; correct?
04:32:26 A. Well it's explicitly assigned a zero.
04:32:28 Q. All right. It's zero, good.
04:32:30 A. Whether or not it's positive or negative.
04:32:34 Q. Yet in the Minnesota Attorney General's model
04:32:36 some expenditures that might have been assigned to a
04:32:38 cold might have been counted because of the theory
04:32:42 that smokers get more colds than nonsmokers; agreed?
04:32:44 A. Well they again looked at all expenditures,
04:32:48 including expenditures for colds and whatever. They
04:32:50 used all expenditures.
04:33:00 Q. All right. Now -- and as I understand it, and
04:33:02 correct me if I'm wrong, you have not given in this
04:33:10 report an opinion about what the difference would be
04:33:14 between the total medical expenditures of smokers in
04:33:20 a given time period versus nonsmokers, you have not
04:33:22 done that in this report; correct?
04:33:30 A. Again this report was testing some of the Dement
04:33:34 assumptions, and in that regard I didn't look at that
04:33:36 aspect, which -- I tried to follow their -- their

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04:33:40 expenditures and look at other dimensions, I didn't
04:33:42 look at the overall costs.
04:33:42 Q. Okay.
04:33:44 A. Or total costs.
04:33:46 Q. You have not compared, for instance, costs of
04:33:48 nursing homes between smokers and nonsmokers or costs
04:33:52 of diseases that are not within the classification of
04:33:54 the Surgeon General's smoking-related, you have not
04:33:56 looked at those; correct?
04:33:58 A. I have not looked at those for those tables,
04:33:58 right.
04:34:32 Q. All right. Now -- and you might have testified
04:34:34 to this, and so I apologize, but there was no reason
04:34:38 you could not have generated Tables 2, 3 and 4 in --
04:34:42 on November 6th, 1998 if you had sufficient time;
correct?
04:34:50 A. If I had sufficient time, I could probably have
04:34:50 done it.
04:35:02 Q. I guess the same is true of Table 1, you could
04:35:06 have generated that in 1965 -- or excuse me --
04:35:06 A. I don't know about that.
04:35:08 Q. -- in January -- you could have generated that
04:35:10 in November of 1998; correct?
04:35:12 A. Table 1, let me see.
04:35:16 Q. Yeah, in your -- in Exhibit 4.

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04:35:20 A. I could have, except the Table 1 is -- I
04:35:22 corrected a typo --
04:35:22 Q. Right.
04:35:26 A. -- that was in the original table, so subject to
04:35:30 catching that typo, just it's the same table, but I
04:35:32 had a typo in the computer code.
04:35:36 MR. McCARTER: We haven't -- we have
04:35:38 another table that corrects another typo.
04:35:42 Q. Oh, another one, okay. Why don't you produce it
04:35:42 then.
04:35:50 A. It's Table 4 of the January 22nd.
04:36:16 Q. All right. Why don't we have this marked.
04:36:18 (McCall Deposition Exhibit 9 marked for
identification.)
04:36:22 Q. What are the differences between Exhibit 9 and
04:36:26 Table 4 in Exhibit 4?
04:36:36 A. Some of the numbers change, and I have to look
04:36:40 at it to recall which ones were changing. Some don't
04:36:44 change but some do change due to I'm actually just
04:36:48 typing in the wrong column. If you -- could I just
04:36:48 see it.
04:36:56 COURT REPORTER: For clarification, we
04:37:00 reserved 6, 7, and 8 for those others.
04:37:00 MR. McCARTER: Okay. Thank you.
04:37:04 A. The changes are really only in column 2 with the

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04:37:06 control set number 4.
04:37:28 Q. They look the same to me.
04:37:32 A. They are the same. I'll have to double-check.
04:37:34 There is -- there was some typos and I can't
04:37:36 remember, maybe I just brought the old -- the old
04:37:38 one. I'll check and --
04:37:40 Q. At any rate, you've got another Table 4 that
04:37:44 corrects the errors in or typos in Table 4?
04:37:46 A. There's no -- yeah, for example, unless I
04:37:50 already did it and I forgot that I did it, but the
04:37:54 zero -- minus 0.0 I think is, if this is the
04:37:56 incorrect table, is associated with another group
04:38:00 like Iron Workers instead of IBEW and then a couple
04:38:04 of numbers changed slightly, but there's not major
04:38:04 changes.
04:38:08 Q. Well are you saying that there will be changes
04:38:12 to Table 4 but this Exhibit 9 doesn't contain them?
04:38:16 A. Right now I can't remember if I had already
04:38:20 caught the error before I sent it to you or whether I
04:38:22 just brought you the wrong table because I brought
04:38:24 the old version rather than the new version, but I'll
04:38:26 check and then if it's new --
04:38:26 MR. McCARTER: We'll send it to you.
04:38:28 A. -- we'll send it to you.
04:38:30 Q. And we'll have it marked as Exhibit 10 then.

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04:38:34 A. Right. The numbers -- one was typed in the
04:38:36 wrong spot. Actually I can check whether this is the
04:38:42 right or wrong table because the reason is when I
04:38:46 made this table I just cut and pasted from my old
04:38:50 tables and filled in the numbers and I think it -- so
04:38:54 if you look at one of these tables back here -- which
04:39:22 is it -- that's equivalent to Table 17. I believe --
04:39:26 yeah, the minus 10.6 had changed a little.
04:39:28 Q. To what?
04:39:32 A. I can't recall, but it's -- there's slight
04:39:34 changes. Most of them again are, you know, negative
04:39:38 or if they're positive they're slightly positive.
04:39:42 But the changes, you know, from -- are -- are not
04:39:48 major; i.e., they don't go to plus 30 or something,
04:39:52 they're minor changes, and it's only for a couple of
04:39:54 these columns. For example, the ones that changed
04:39:56 should be correct; I think it's just the Service
04:40:02 Employees and the Iron Workers that stayed the same,
04:40:04 they should have changed slightly.
04:40:08 Q. So as I understand, let's just focus on that, on
04:40:12 Table 4 for the Iron Workers Local #17 you have
04:40:14 estimated smoking-attributable fractions for
04:40:22 insurance funds under Control Set 4 as a minus 10.6
04:40:26 percent with a confidence interval of between a minus
04:40:32 703.5 percent to a positive 26.3 percent; correct?

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04:40:38 A. Again my point estimate using expenditure data
04:40:42 is -- is that, what you said, with the confidence
04:40:44 interval. Now what happened was when I added private
04:40:48 insurance it changed a little, but not substantially,
04:40:54 it's just I forgot to type in the change. When I cut
04:40:56 and pasted --
04:41:00 Q. In other words, the -- the upshot of the minus
04:41:08 10.6 percent, forget about the error for a second, --
04:41:08 A. Okay.
04:41:16 Q. -- is that the Iron Workers Local #17 had a
04:41:18 negative smoking-attributable fraction?
04:41:24 A. Well that's -- what I'm saying, I'm not saying
04:41:28 that they had a negative smoking-attributable
04:41:30 fraction. I'm saying that when I use expenditure
04:41:34 data rather than mortality data and controlling for
04:41:36 these compounding factors, my point estimate changes
04:41:40 or is minus 10.6 with this confidence level.
04:41:44 Q. Which means it could be as high as 26.3 percent
04:41:48 or as low as a minus 703 percent?
04:41:48 MR. McCARTER: Objection,
04:41:50 mischaracterizes.
04:41:54 A. Again, that's just giving the -- again the
04:41:56 confidence interval for that estimate, it's again not
04:42:00 saying anything has to do with, quote-unquote,
04:42:02 "smoking-attributable expenditures".

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04:42:06 Q. And the mid point range in the control set
04:42:06 number 3 with a smoking-attributable fraction of 8.5
04:42:14 is within the confidence intervals of 703 -- minus
04:42:18 703.5 to positive 26.3; correct?
04:42:20 A. Could you repeat that?
04:42:24 Q. The mid point estimate in subset 3 for the Iron
04:42:26 Workers is within the confidence interval for control
04:42:28 set 4; correct?
04:42:34 MR. McCARTER: Did you say 8.3?
04:42:36 MR. WITHEY: 8.5.
04:42:40 A. Yeah, it's in the confidence level. 8.5 is in
04:42:42 that confidence interval.
04:42:44 Q. And we asked you questions about that before?
04:42:44 A. Right.
04:42:48 Q. For the IBEW Local 38 the 21.1 percent
04:42:52 smoking-attributable fraction is within the
04:42:54 confidence intervals for control set 4?
04:42:56 A. Correct.
04:42:58 Q. And the same is true of the Dealers - Unions,
04:43:02 the control -- excuse me -- the mid point range or
04:43:06 point estimate of 9.9 percent smoking-attributable
04:43:10 fraction is within the confidence interval for
04:43:10 control set 4?
04:43:14 A. Yeah, again I think for every case the point
04:43:14 estimate is there.

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04:43:16 Q. All right.
04:43:16 MR. McCARTER: Except the --
04:43:18 THE WITNESS: Oh, is there one there that
04:43:18 is not?
04:43:20 MR. McCARTER: Yes.
04:43:22 MR. WITHEY: Let the record reflect counsel
04:43:26 coached the witness, but anyway it's what it is.
04:43:28 MR. McCARTER: It's on the paper. He just
04:43:30 didn't look at the right information.
04:43:34 MR. WITHEY: I'm sure he didn't. Fair
04:43:34 enough.
04:43:48 THE WITNESS: Oh, I see.
04:43:52 Q. Now if you had wanted to, and I know you said
04:43:56 you weren't asked to do this, but if you had wanted
04:44:04 to, you could have attempted to determine the
04:44:06 smoking-attributable fraction, if you will, for all
04:44:10 NMES expenditures between smokers and nonsmokers
04:44:16 rather than limiting it to the ICD-9 disease
04:44:18 categories; correct?
04:44:26 A. People can do that, yes. I mean people have
04:44:26 done that like Miller and --
04:44:28 Q. I'm asking if you're capable of doing that?
04:44:30 A. Potentially.
04:44:30 Q. But you've never done it; correct?
04:44:36 A. Not -- other than, you know, I remember doing

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04:44:38 some sensitivity analysis of Miller, you know, the
04:44:44 Minnesota stuff, which involved NMES, and I probably
04:44:48 was in that case calculating SAFs for total medical
04:44:48 expenditures.
04:44:50 Q. Well I'm just asking if you have ever yourself,
04:44:56 whether it be in a tobacco case or some other case,
04:44:58 taken given population and attempted to utilize NMES
04:45:02 in order to calculate the smoking-attributable
04:45:04 fractions for all medical expenditures between
04:45:06 smokers and nonsmokers?
04:45:12 A. Other than doing it for -- you know, in terms of
04:45:14 sensitivity tests.
04:45:14 Q. Right.
04:45:18 A. I don't think I was ever asked to do that. I
04:45:18 don't remember doing that.
04:45:22 Q. I'm just -- I guess instead of as opposed to
04:45:24 trying to look at some other expert's work and
04:45:28 critique it or run sensitivity tests, I'm asking
04:45:30 whether you've ever been asked to run an analysis
04:45:36 using NMES data of differences in smoking versus
04:45:40 nonsmoking and medical expenditures from start to
04:45:40 finish?
04:45:42 A. I don't think I was ever asked to do that.
04:45:46 Q. And you've never done that in your non-tobacco
04:45:48 related work as it relates to any other, you know,

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04:45:52 risk factor; correct?
04:45:52 A. No.
04:45:54 Q. That is correct then?
04:45:56 A. That is correct.
04:46:20 Q. Now let me read you a quote and see if you agree
04:46:26 with this, Dr. McCall: In the 1800s a British Prime
04:46:30 Minister Disraeli said there's three type lies:
04:46:38 Lies, damned lies, and statistics, and that was about
04:46:42 over 100 years ago, but since then in the 1930s a
04:46:48 statistician named Jerzy Newman invented confidence
04:46:54 intervals, and to overcome that we need confidence
04:46:58 intervals at a sufficiently high confidence level,
04:47:02 something like 95 percent or greater, to ensure rigor
04:47:06 so we just can't show up -- we just can't show
04:47:08 anything using statistics.
04:47:10 Do you agree with that -- that testimony?
04:47:12 A. I said that, so I agree with it.
04:47:12 Q. You still agree with it?
04:47:14 A. Yes.
04:47:18 Q. In the -- in the report you submitted in the
04:47:22 Northwest Laborers case you did not present
04:47:26 confidence intervals for any of the tables you
04:47:30 utilized in that -- in your original report; correct?
04:47:32 A. I guess at that time I didn't have sufficient
04:47:36 time to do it. I did it for limited cases and I

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04:47:40 think I talked about that. Again my goal was not in
04:47:42 this case either to -- to present estimates of
04:47:46 smoking-attributable fractions rather than to make
04:47:50 sensitivity checks and see whether or not potential
04:47:52 red flags are raised due to certain assumptions that
04:48:00 are made by Dement and Roberts; for example, using
04:48:00 mortality ratio approach versus expenditure.
04:48:50 Q. You understand that the damage model utilized by
04:48:52 the Plaintiffs in this case at least excluded
04:48:54 expenditures for persons under 35 years of age?
04:48:58 A. Yes.
04:49:16 Q. And in your -- well, would that -- by doing
04:49:20 that, would that have excluded certain diseases that
04:49:22 might be captured by ICD-9 that the Surgeon General
04:49:24 -- Strike that.
04:49:28 By doing that, would that exclude certain
04:49:32 diseases for persons under 35 that might be
04:49:36 smoking-related, potentially?
04:49:40 A. I haven't investigated that, but potentially.
04:49:42 Q. You have not investigated whether there are
04:49:46 diseases; for instance, Sudden Infant Death Syndrome,
04:49:48 that are associated with smoking cigarettes?
04:49:50 A. I haven't examined that.
04:49:54 Q. Okay. To the extent to which there are diseases
04:49:56 that are associated with smoking cigarettes that are

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04:50:02 not captured by the Dement model, to that extent at
04:50:04 least that model would be conservative?
04:50:06 MR. McCARTER: Objection; incomplete
04:50:06 hypothetical.
04:50:10 A. I guess I'm unclear what you mean.
04:50:12 Conservative, with respect to what?
04:50:14 Q. Would underestimate smoking-attributable
04:50:14 expenditures.
04:50:16 MR. McCARTER: Same objection.
04:50:18 Q. Or underestimate smoking-attributable
04:50:20 mortality.
04:50:30 A. Well, I don't know whether or not even if those
04:50:34 are true whether that necessarily implies anything
04:50:38 with regard to underestimating damages.
04:50:44 Q. I didn't ask that. I -- why don't you read the
04:50:44 question back.
04:51:30 (The record was read by the reporter.)
04:51:34 MR. McCARTER: Same objection.
04:51:36 A. Well in terms of smoking-attributable
04:51:40 expenditures, by throwing out under 35 and I guess
04:51:42 since you've talked about SIDS and at least I didn't
04:51:46 see that in the Surgeon General report that Dement
04:51:50 used, you're opening up to all sorts of diseases,
04:51:52 then you potentially may be throwing out both
04:51:56 negative plus positive values, so it's unclear which

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04:52:00 way it would go in terms of conservative.
04:52:04 Q. I'm asking you to assume, I know you don't know,
04:52:06 but I'm asking you to assume that there are diseases
04:52:10 that people get under age 35 that are
04:52:14 smoking-attributable. Okay. Assume that.
04:52:16 A. So you're assuming that you're throwing away all
04:52:18 positives.
04:52:20 Q. Right. If you assume that to be true, okay.
04:52:24 And they're not included within any particular damage
04:52:28 model, that at least to that -- to that extent the
04:52:34 damage model would underestimate or could potentially
04:52:38 underestimate smoking-attributable expenditures?
04:52:42 MR. McCARTER: Objection; incomplete
04:52:42 hypothetical.
04:52:46 A. Well I guess you're presuming that with
04:52:46 everything else fixed.
04:52:48 Q. Yeah, everything else being there.
04:52:52 A. And the only differences you're throwing out --
04:52:54 so you're looking at the effect of simply throwing
04:52:56 that out and under the assumption that you're
04:53:00 throwing out a positive number, then your estimate
04:53:00 would be lower.
04:53:14 Q. Okay. Now when you use NMES to compare the
04:53:20 ICD-9 diseases -- Strike that.
04:53:40 Have you since your deposition -- since I took

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04:53:42 your deposition in Northwest Laborers, have you
04:53:44 conducted any investigation to determine whether the
04:53:50 trust funds pay for any expenditures for persons over
04:53:54 the age of 65 in this -- in Ohio?
04:53:54 A. In Ohio?
04:53:56 Q. Yes.
04:54:02 A. What I've looked at was just total expenditures
04:54:06 as reported in some of the reports for people 65 and
04:54:08 over. I believe there were some break outs.
04:54:14 Q. Did you receive the claims data from the trust
04:54:14 funds in this case?
04:54:18 A. I believe I have. I don't know if I've
04:54:22 explicitly looked at the individual claim data at
04:54:26 this point. But I mean what I've looked at was the
04:54:30 summaries by Roberts of some of the claim data.
04:54:32 Q. No, I'm asking if you received the computer
04:54:36 disks, electronic format, for the claims data from
04:54:38 the 6 claims trust funds?
04:54:40 A. I believe I have.
04:54:42 Q. And have you indicated on -- in your reports
04:54:46 what conclusions, if any, you draw from your review
04:54:48 of those disks?
04:54:50 MR. McCARTER: Objection; vague.
04:54:58 A. Again, I think that my focus was not on those
04:55:02 claims per se but rather on the methods used to

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04:55:06 impute estimates or to obtain estimates. I haven't
04:55:08 looked --
04:55:10 Q. Therefore the answer is no; correct?
04:55:12 A. I haven't looked at the claims in detail, and
04:55:16 therefore I have not made specific conclusion
04:55:16 regarding those claims.
04:55:20 Q. And thus nowhere in any of your reports is there
04:55:24 any reference to the claims data disk in electronic
04:55:28 format; correct, either in a table, a chart, or in
04:55:30 any words used?
04:55:38 A. Well I mean the estimates in Table 4 of -- of my
04:55:44 Supplemental Expert Report, in Tables 15 through
04:55:52 whatever, are based on the claim data to the extent
04:55:56 that the Roberts' analysis is based on that claim
04:55:56 data because --
04:55:58 Q. I'm not talking about Roberts' analysis of claim
04:56:02 data. I'm talking about your analysis of electronic
04:56:06 claims data. That's what I'm asking you about. Is
04:56:08 there any reference to your having received and
04:56:10 reviewed the claims data from -- in electronic format
04:56:12 from the trust funds in any of these reports?
04:56:14 MR. McCARTER: Asked and answered.
04:56:16 A. I don't believe so.
04:56:18 Q. All right. Have you identified that as one of
04:56:20 the documents or materials that you've relied upon in

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04:56:22 formulating any opinions in this case?
04:56:24 A. The data?
04:56:24 Q. Yes.
04:56:30 A. I don't think I, in terms of data, especially
04:56:34 any data supplied by the Plaintiffs, mentioned
04:56:38 explicitly that I relied upon it. I thought it was
04:56:40 just assumed.
04:56:40 Q. Oh, it was assumed?
04:56:44 A. Well, that I had at least gotten it.
04:56:44 Q. Why would you believe that it would be assumed
04:56:48 that you had gotten it? I'll strike that.
04:56:52 So I take it then that you have relied upon your
04:56:56 review of electronic claims data obtained from the
04:56:58 Plaintiffs in this case; is that your testimony?
04:57:00 A. Well I guess I should state that, more
04:57:02 explicitly, I received it. At this time I haven't
04:57:08 examined it in detail and don't have any explicit
04:57:12 comments regarding sort of the detail of that data.
04:57:16 Q. What did you do with the claims data?
04:57:20 A. At this point I -- other than -- I haven't
04:57:24 explicitly analyzed it other than use some of the
04:57:28 summaries of it in the Roberts' report to -- in my
04:57:36 calculations on tables, for example, 17, where I try
04:57:40 to show the sensitivity analyses in terms of
04:57:48 calculating smoking-attributable fractions for a

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04:57:48 particular trust fund.
04:57:52 Q. All right. So you did use the electronic claims
04:57:54 data that you received for that purpose; correct?
04:57:58 A. Well I didn't explicitly use data rather than go
04:58:00 to Roberts' report.
04:58:02 Q. I'm not asking about Roberts, I'm asking about
04:58:06 electronic claims data. Did you look at the
04:58:08 electronic claims data?
04:58:12 A. The data, the data on the disk I didn't look at
04:58:14 it in detail. I can't remember if I --
04:58:16 Q. Did you look at it at all?
04:58:18 A. I think I remember looking at the files briefly.
04:58:20 Q. What did you look at?
04:58:22 A. Briefly I looked to see what sort of variables
04:58:24 were in there.
04:58:26 Q. Did you do any computer run of it?
04:58:30 A. I'm trying to distinguish between this case and
04:58:34 the northwest area -- or Northwest Laborers case. I
04:58:36 don't think I did any runs on the Ohio case.
04:58:38 Q. Did you get any printouts?
04:58:44 A. Again, I remember running a couple of things,
04:58:48 but I can't remember if it's for Ohio or -- or for
04:58:48 the Northwest.
04:58:50 Q. What couple of things did you run?
04:58:52 A. Some of the programs that were supplied.

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04:58:56 Q. All right. And what were you looking at?
04:58:58 A. Just to see if they would be -- what sort of
04:59:00 output would be generated.
04:59:00 Q. Did you find anything out?
04:59:06 A. Nothing striking.
04:59:10 Q. What did you find out that was unstriking?
04:59:14 A. Since it wasn't striking, I don't remember. I
04:59:16 just remember it produced output and it ran and
04:59:18 either I may have checked a couple numbers to make
04:59:22 sure that at least some numbers matched and was
04:59:26 satisfied and then just put it away.
04:59:26 Q. What numbers did you check?
04:59:30 A. I don't remember. I'm just saying --
04:59:32 Q. Do you remember anything about any examination
04:59:38 you made of the electronic claims data in the Ohio
04:59:40 trust fund litigation?
04:59:42 A. Again, I can't remember anything explicit.
04:59:48 Q. So I take it you didn't rely upon that in any
04:59:48 way; is that correct?
04:59:52 A. In the opinions in these reports I, when -- when
04:59:56 making use of claim data, used some of the summaries
04:59:58 contained in the Roberts' report.
05:00:02 Q. Well, you could have done any number of things
05:00:06 with the electronic claims data you received from the
05:00:08 Plaintiffs from this case; fair enough?

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05:00:10 A. If I had time, I could have done anything, yeah,
05:00:12 sure.
05:00:14 Q. Right. You could have determined what is the --
05:00:18 for instance, the distribution of diseases across all
05:00:22 five of the claims -- electronics claims records if
05:00:24 you wanted to; correct?
05:00:24 A. Potentially, yes.
05:00:28 Q. You could have determined whether any of the
05:00:30 numbers generated by either -- by Stan Roberts were
05:00:34 or were not correct; isn't that right, if you wanted
05:00:34 to?
05:00:40 A. Potentially. I mean in terms of the actual sort
05:00:44 of aggregate totals of, you know, expenditures or
05:00:44 claims.
05:00:48 Q. Right. And as far as the -- whatever run you
05:00:50 did of the numbers, you didn't find anything that was
05:00:56 in error about what Stan Roberts put in his report,
05:00:56 is that correct?
05:00:58 A. To my recollection I didn't find anything.
05:01:00 Q. And if you had found something in error, you
05:01:02 would have brought it to Mr. McCarter's attention or
05:01:06 somebody's attention; fair enough, and put it in a
05:01:08 report or something, perhaps?
05:01:08 A. Perhaps.
05:01:10 Q. Now how many different data points were

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05:01:14 reflected in the electronic claims data you got from
05:01:16 the Plaintiffs in this case?
05:01:18 A. There was a lot. I can't recall. Several
05:01:18 thousand.
05:01:18 Q. Several thousand?
05:01:22 A. In terms of observation.
05:01:28 Q. In terms of patients or beneficiaries I should
05:01:30 say, in terms of age, in terms of years, I mean in
05:01:34 terms of status as a beneficiary or dependent, in
05:01:38 terms of how old they were, in terms of ICD-9s, there
05:01:40 must have been hundreds and hundreds of thousands of
05:01:42 data points for --
05:01:46 A. Oh, you're talking about everything combined.
05:01:46 Q. If not millions; fair enough?
05:01:48 A. Potentially.
05:01:50 Q. And do you recall how many individual lines of
05:01:50 data there were?
05:01:52 A. Not exactly, but there was a lot.
05:01:56 Q. All right. And you understood that from this
05:02:00 electronic claims data that you received in
05:02:06 electronic format that every time -- purportedly
05:02:10 every time a beneficiary or dependent went in to
05:02:14 receive medical care for which the trust fund was
05:02:16 charged there would be a line of data entry for that
05:02:18 -- that visit; correct?

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05:02:20 A. I guess that was my understanding for particular
05:02:22 years, not all years.
05:02:24 Q. Well for the years that were covered by the
05:02:26 electronic claims data; correct?
05:02:28 A. Right, yeah.
05:02:30 Q. It didn't have data for years that wasn't
05:02:32 included within the data, did it?
05:02:34 A. No, but there were years that damages have been
05:02:38 calculated that there aren't claims data for, or
05:02:40 generated.
05:02:44 Q. Sure. And you -- you could have run -- you
05:02:48 could have made a run to determine whether the --
05:02:52 that the age distribution within any of the Plaintiff
05:02:54 trust funds were; correct?
05:03:00 A. The age distribution in the trust funds or the
05:03:04 age distribution -- there's a difference between --
05:03:08 Q. I'm talking about among the beneficiaries.
05:03:10 A. Amongst those who filed claims?
05:03:10 Q. Yeah.
05:03:12 A. But that's different than the coverage.
05:03:14 Q. Well do you know that we're asking for any money
05:03:16 for people who never filed a claim?
05:03:20 A. Well all I have is the claim data so --
05:03:22 Q. All right. For the claims data, if you wanted
05:03:26 to determine what the age distribution of that -- of

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05:03:28 those claims in that trust fund were for the years,
05:03:30 you could have done that; correct?
05:03:32 A. For the claim data, yes.
05:03:34 Q. You could have determined how many claims were
05:03:38 made for lung cancer if you had wanted to; correct?
05:03:40 A. I believe so, but I --
05:03:44 Q. You could have done everything that -- that Stan
05:03:48 Roberts did with the electronic claims data that you
05:03:50 received; correct, if you had wanted to?
05:03:52 A. Potentially.
05:04:28 Q. All right. Let me ask if you have the expertise
05:04:32 to answer this question: Do you agree with the
05:04:36 Surgeon General that numerous attempts to control
05:04:40 statistically for confounding and stratifying
05:04:42 variables have not materially altered the estimated
05:04:46 relative risk for cigarette-related diseases?
05:04:48 A. I haven't investigated that in particular
05:04:50 detail.
05:04:54 Q. Well I'm asking whether you have the expertise
05:05:02 to determine from a -- to determine whether that
05:05:04 statement is or is not true?
05:05:08 A. Whether or not --
05:05:12 Q. Whether or not, as discussed in Chapter 2 --
05:05:12 A. Right.
05:05:16 Q. -- and 3 of the Surgeon General's Report of

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05:05:18 1 1989, quote, "Numerous attempts to control
05:05:22 2 statistically for confounding and stratifying
05:05:24 3 variables have not materially altered the estimated
05:05:26 4 relative risk for cigarette-related diseases"?
05:05:30 5 A. I have the expertise to check the statistical
05:05:30 6 aspects of that statement.
05:05:32 7 Q. Have you ever tried to do that?
05:05:34 8 A. Not at this time, no.
05:05:40 9 Q. Have you ever yourself tried to -- to test
05:05:48 10 whether confounding or stratifying variables have or
05:05:52 11 have not altered estimated relative risk for any
05:06:00 12 diseases in any study?
05:06:04 13 A. Could you repeat that question?
05:06:08 14 Q. Have you -- have you ever attempted to control
05:06:12 15 statistically for confounding or stratifying
05:06:18 16 variables in any epidemiological study to determine
05:06:22 17 whether they materially altered the estimated
05:06:24 18 relative risk for any diseases?
05:06:24 19 A. Yeah.
05:06:26 20 Q. And which diseases are those?
05:06:30 21 A. Again, in the latex study, looking --
05:06:32 22 Q. Is that the only one?
05:06:34 23 MR. McCARTER: Were you finished?
05:06:36 24 MR. WITHEY: I'm sorry. I thought you were
05:06:38 25 done.

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05:06:48 A. Well to the extent that I -- relative risks,
05:06:50 there's another study that I looked at which we were
05:07:08 looking at enter day variation in heart attacks;
05:07:10 i.e., there's a "Monday Effect" in heart attacks, and
05:07:14 we were -- a colleague, David Card, and I, we're
05:07:18 still working on this project, although it's been put
05:07:20 on the back burner, have been looking at what
05:07:24 potentially -- potentially might explain that effect
05:07:28 and whether or not -- what we're interested in is
05:07:34 trying to ascertain measures of employment; stress,
05:07:38 for example, potential layoffs, and in that
05:07:40 situation, you know, we do attempt to control for
05:07:48 confounding to ascertain that, so in a sort of
05:07:50 general sense that's a relative risk type problem,
05:07:54 the relative risk of getting a heart attack on Monday
05:08:00 for certain groups, those at high risk for layoffs
05:08:00 versus low risk.
05:08:04 Q. Okay. Other than that circumstance in the latex
05:08:08 work that you're going to give me the charts you
05:08:10 showed OSHA on, is there any other circumstance in
05:08:12 which you've done it?
05:08:14 A. Those are all I can recall at the moment.
05:08:16 Q. All right. So it's only been those two
05:08:18 circumstances then; correct?
05:08:30 A. At this time that's all I can think of.

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05:08:30 Q. Now you cite --

05:08:32 MR. McCARTER: Do you want to take a break

05:08:34 at some time or --

05:08:38 MR. WITHEY: Well I'm going to be done in

05:08:42 about a half an hour. Let's take a break.

05:13:28 (Recess from 3:23 to 3:28 p.m.)

05:13:28 BY MR. WITHEY:

05:13:32 Q. In your Supplemental Report, Exhibit 4, you cite

05:13:34 I think for the first time; correct me if I'm wrong,

05:13:50 articles dealing with differences between blue collar

05:13:54 workers and white color workers on page 3; is that

correct?

05:13:58 A. 3, and I think also 4.

05:14:04 Q. Yes. And the footnotes 2 through 9 contain a

05:14:08 number of articles that you've culled from the

05:14:12 medical or scientific literature that address that

05:14:16 issue; correct?

05:14:16 A. Correct.

05:14:18 Q. And is it fair to say that those were articles

05:14:20 -- well when did you first discover those articles?

05:14:28 A. I think I discovered them at different times.

05:14:38 The first time I can't remember exactly, a month or

05:14:40 two ago, somewhere in that neighborhood.

05:14:42 Q. These were articles by and large that could have

05:14:44 been included within your November 6th report;

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correct?

05:14:48 A. They existed prior to that, yes.

05:14:52 Q. Well, and -- and you -- you start out this

05:14:54 discussion saying, As mentioned in my November 6th

05:14:58 report, Dement and Roberts used a mortality approach

05:15:02 using CPS II, a study that's not representative, you

05:15:06 claim, of the types of workers insured by insurance

05:15:08 funds; correct?

05:15:08 A. Correct.

05:15:10 Q. In other words, that topic that -- was raised by

05:15:14 the reports that John Dement and Stan Roberts filed

05:15:18 in this case prior to your writing the November 6th

05:15:18 report; correct?

05:15:26 A. The topic of using the American Cancer

05:15:26 Society, --

05:15:28 Q. Yes.

05:15:28 A. -- right.

05:15:30 MR. McCARTER: Let me object to the

05:15:32 question. Vagueness. I believe you said the

05:15:34 November 6th report.

05:15:36 Q. Prior to Dr. McCall filing his November 6th

05:15:40 report he was aware that Dement and Roberts were

05:15:46 relying upon the CPS II and that the trust funds in

05:15:50 this case were -- in your words, insure primarily

05:15:50 blue collar workers; correct?

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05:15:52 A. Correct.
05:15:56 Q. And therefore -- and you also had available to
05:15:58 you all of the studies that you cited because none of
05:16:02 them were written after November 6th, 1998; correct?
05:16:02 A. Correct.
05:16:06 Q. Therefore the part of your report that is now in
05:16:08 the January 22nd report could have been put in the
05:16:12 November 6th report had you so chosen to do so and
05:16:14 had the time to do so; correct?
05:16:14 A. It may have been, yes.
05:16:20 Q. All right. Now without waiving our objections
05:16:24 to the late filing of this report as it relates to
05:16:26 that topic, I want to ask you a few questions about
05:16:30 some of these articles that you've cited. Is that
05:16:32 fair enough?
05:16:32 A. Okay.
05:16:36 Q. All right. First of all, have you made any
05:16:42 systematic attempt to determine from the medical or
05:16:46 occupational literature whether the articles that you
05:16:52 cite here is a comprehensive or exhaustive list of
05:16:54 articles dealing with the topic that you've
05:16:54 addressed?
05:16:56 MR. McCARTER: Objection; vague.
05:17:00 A. I haven't had time I don't think to make a
05:17:04 comprehensive, you know, analysis or review of the

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05:17:10 literature. I've looked through Medline and, you
05:17:12 know, looked through these articles and their
05:17:14 references and the reference of the articles I got,
05:17:20 but I haven't had time to make a completely
05:17:22 comprehensive review.
05:17:24 Q. And what search key words did you use to conduct
05:17:26 this search in Medline?
05:17:38 A. I'm trying to recall. I believe I searched on
05:17:40 perhaps things dealing with "occupation," "work,"
05:17:44 "blue collar," some of those factors.
05:17:46 Q. Any others you can think of?
05:17:48 A. That's all I can remember.
05:17:52 Q. Have you made a systematic attempt to compare in
05:17:56 any empirical way the difference between the subject
05:18:00 population in this case and the population at issue
05:18:00 in any of those studies?
05:18:08 A. Systematic way to compare the subject
05:18:10 population, you mean the groups in the trust fund?
05:18:12 Q. Yes.
05:18:14 A. No, not at this time I haven't.
05:18:16 Q. And, for instance, in one of the articles it
05:18:20 talks about socioeconomic status and carotid arterial
05:18:24 sclerosis, the Lynch paper; is that correct?
05:18:26 A. Yes, that paper, I see it.
05:18:28 Q. Does the beneficiary population fall within any

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05:18:32 category of socioeconomic status, if you know, that
05:18:36 is -- that is studied in that paper?
05:18:42 A. I haven't studied that. You mean of this
05:18:44 group? No, I haven't studied that.
05:18:48 Q. Would you agree that the paper examined a
05:18:52 potential important bias relating to the possibility
05:18:54 that existing disease might result in lower
05:18:58 socioeconomic status?
05:19:00 A. It may have made some statement to that effect.
05:19:02 I can't recall.
05:19:04 Q. You would agree that's a possible bias in that
05:19:06 -- in that analysis then; correct?
05:19:08 MR. McCARTER: Objection; vague.
05:19:12 A. I again have to refresh my memory on it again to
05:19:16 recall specifically.
05:19:28 Q. Now did any of the articles -- Strike that.
05:19:34 You state that -- on the top of page 3 of the
05:19:38 Supplemental Report of January 22nd that blue collar
05:19:40 workers differ from white collar workers along many
05:19:46 dimensions that can impact medical expenditures. Do
05:19:46 you see that there?
05:19:46 A. Yes.
05:19:50 Q. You don't necessarily draw the conclusion that
05:19:52 they do in fact impact medical expenditures?
05:19:56 A. What I'm worried about is the possibility, and

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05:20:00 that's why I would worry about the possibility that
05:20:06 -- that focusing on or controlling for occupation
05:20:10 may make a difference in -- in estimates dealing with
05:20:12 medical expenditures.
05:20:16 Q. All right. And as I understand it then -- well,
05:20:16 strike that.
05:20:24 Which of the papers examine the issue of medical
05:20:28 expenditures as opposed to whether these factors
05:20:32 affect health status or disease, if any?
05:21:12 A. I believe here these studies all relate to
05:21:20 occupational differences in behaviors or conditions,
05:21:24 but not directly for -- I can't recall off the top of
05:21:30 my head which ones relate directly to medical
05:21:32 expenditures. I don't think there are any.
05:21:34 Q. Okay. And would you agree that someone trained
05:21:38 in cardiology, such as Dr. Lauer, would -- would be
05:21:44 better able than you are to determine whether any
05:21:46 particular risk factor identified in any of these
05:21:52 papers is or is not causally related to or a risk
05:21:56 factor associated with heart disease, coronary heart
05:22:00 disease, arteriosclerotic disease, and et cetera,
05:22:02 that that's a medical judgment?
05:22:08 A. That -- can you repeat the question? I was
05:22:10 unclear of the exact question.
05:22:14 Q. Sure. What I'm asking you is whether you would

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05:22:16 agree that a cardiologist, board-certified
05:22:20 cardiologist, such as, for instance, Dr. Lauer, is
05:22:22 better able than you are to determine what risk
05:22:26 factors identified in any of these articles may be a
05:22:32 cause of any cardiac disease?
05:22:38 A. He would presumably know the risk factors for
05:22:40 cardiac disease --
05:22:40 Q. Okay.
05:22:44 A. -- in more detail than I do, yes.
05:22:46 Q. All right. You don't hold yourself out to be an
05:22:48 expert in heart disease, do you?
05:22:50 A. Not in heart disease.
05:22:52 Q. Or I say you don't hold yourself out to be an
05:22:56 expert in what causes heart disease; fair enough?
05:22:58 A. Not what causes heart disease, no.
05:23:00 Q. And you don't hold yourself out to be an expert
05:23:04 on what are the risk factors that cause or may cause
05:23:06 heart disease; correct?
05:23:08 A. I'm not an expert in the risk factors of heart
05:23:08 disease.
05:23:12 Q. And you don't hold yourself out to be an expert
05:23:16 in comparing what are the -- one risk factor to
05:23:20 another risk factor in causing heart disease in terms
05:23:22 of the importance in causing those diseases; correct?
05:23:30 A. In heart disease in terms of risk factors I'm

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05:23:32 not an expert in -- in that.
05:23:34 Q. So in other words, you can't assess the
05:23:38 significance of one risk factor compared to another
05:23:40 risk factor in causing heart disease as to which is
05:23:42 or is not more important?
05:23:48 A. Well I -- as long as -- I can look at
05:23:52 statistical models and assess from a statistical
05:23:56 sense, I can interpret the statistical models and
05:23:58 estimate those from a statistician's point of view,
05:24:02 but in terms of a medical point of view, I can't.
05:24:08 Q. Now one of these articles is titled "Why do Poor
05:24:08 People Behave Poorly?". Do you see that? That's
05:24:10 another Lynch article?
05:24:14 A. Which -- is that on 3 or 4?
05:24:18 Q. I think it's on footnote 2?
05:24:20 A. Oh, okay.
05:24:22 Q. Do you see that?
05:24:22 A. Yeah, now I see it.
05:24:24 Q. Do you consider the population at issue in this
05:24:24 case poor people?
05:24:42 A. Not by any sort of standard definition of
05:24:42 "poor".
05:24:46 Q. Do you consider the population in this case to
05:24:52 be people who have access to health care in a general
05:24:54 sense by definition?

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05:24:56 A. Yeah, they have access to healthcare.
05:24:58 Q. All right. These are not -- this is not a
05:25:02 population that is -- is divided amongst a
05:25:04 significant percentage of people who have no
05:25:08 healthcare plan as opposed to those that do. These
05:25:10 are by definition people all of which have a
05:25:12 healthcare plan; correct?
05:25:18 A. They are covered by their -- their union
05:25:18 healthcare plan.
05:25:20 Q. Have you -- have you drawn the opinion that
05:25:24 people who suffer from the diseases identified in the
05:25:28 Surgeon General's report as linked to smoking,
05:25:32 including cancers, lung cancer, heart disease, or
05:25:36 chronic obstructive pulmonary disease, that those are
05:25:38 people with those -- that the people with those
05:25:42 diseases are not likely to utilize healthcare
05:25:44 services where someone else is paying for it, in this
05:25:46 case, the trust funds?
05:25:48 MR. McCARTER: Objection; vague.
05:25:50 A. Could you repeat the question, please?
05:25:52 Q. Do you think the people in this beneficiary
05:25:56 population who incur diseases linked to smoking such
05:26:02 as cancers and heart disease and pulmonary -- chronic
05:26:04 obstructive pulmonary disease likely take advantage
05:26:08 of the healthcare plan that they -- that the trust

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05:26:08 funds provide?
05:26:12 A. From the trust fund data you can only see those
05:26:16 who actually sought treatment, you can't see those
05:26:16 who didn't.
05:26:18 Q. Well do you have an opinion that people who
05:26:22 suffer from those diseases like lung cancer and
05:26:26 coronary heart disease and chronic emphysema are or
05:26:30 are not likely to take advantage of the healthcare
05:26:32 plan offered by these trust funds, assuming they
05:26:38 incur the diseases and need the treatment?
05:26:40 MR. McCARTER: Objection; vague.
05:26:46 A. Could you repeat that? I missed the last --
05:26:46 very last part.
05:26:50 Q. Well, have -- do you have any opinion that the
05:26:54 beneficiaries in this population who get the diseases
05:26:58 that the Surgeon General says are caused by smoking,
05:27:02 like lung cancer, congestive heart disease, and
05:27:08 emphysema, do not take advantage of the medical plan
05:27:08 offered?
05:27:12 A. Well there's -- there's literature on
05:27:14 differential utilization rates and some of the
05:27:20 literature looked at individuals who were covered by
05:27:28 insurance, there's been papers by Vogt and
05:27:34 Schweitzer, and Oakes, and others that have looked at
05:27:38 this issue, so there's certainly differences in

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05:27:42 utilization rates whether or not they have insurance,
05:27:44 there's research on that.
05:27:44 MR. WITHEY: Move to strike as
05:27:48 nonresponsive. Could you read the witness the
05:27:48 question back, please, Madam Court Reporter.
05:28:26 (The record was read by the reporter.)
05:28:28 A. I have no information about again the
05:28:30 utilization rates in this particular trust fund.
05:28:34 Q. So I take it you have no opinions on that topic
05:28:34 then; correct?
05:28:36 A. For these particular -- again I don't have the
05:28:38 data on the underlying population.
05:28:42 Q. So you don't have any opinions on whether they
05:28:44 utilize healthcare or not then, I take it; correct?
05:28:46 MR. McCARTER: Asked and answered.
05:28:48 A. For the particular trust funds participants I do
05:28:52 not have that data and so I cannot make an explicit
05:28:56 opinion for them whether or not they will utilize it.
05:29:02 Q. Well have you sought to utilize a study of other
05:29:08 -- other populations and apply it to the
05:29:10 beneficiaries in this case as it relates to
05:29:14 healthcare utilization for smoking-attributable
05:29:14 diseases?
05:29:18 A. Well one of the reasons why I used expenditure
05:29:22 data rather than mortality, one of the potential

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05:29:26 differences is the differences in utilization rate
05:29:34 that -- that that sort of breaks the chain between
05:29:38 necessarily disease and expenditures, and one of my
05:29:44 sort of additional sensitivity tests was designed to
05:29:48 try to get an estimate of what the effects of
05:29:52 focusing just on those who were covered by health
05:29:56 insurance would have on my results.
05:29:56 MR. WITHEY: Move to strike as
05:30:00 nonresponsive. Madam Court Reporter, could you read
05:30:02 the witness the question?
05:30:28 (The record was read by the reporter.)
05:30:28 Q. Have you done that?
05:30:40 A. Again, in the tables -- what is it -- 4 of my
05:30:46 Supplemental Report what I did was using the -- the
05:30:50 aggregate data from the trust funds on expenditures
05:30:56 for, quote-unquote, "smoking-related conditions" and
05:31:02 using data from the NMES, what I tried to do was a
05:31:06 sensitivity test to check whether or not my estimates
05:31:12 in terms of estimated smoking-attributable fractions
05:31:14 depended on whether or not an individual had
05:31:14 insurance.
05:31:20 Q. So what -- the question I asked you, Doctor,
05:31:22 was: Did you take the results of health utilization
05:31:28 studies of one population and apply it to the
05:31:30 beneficiaries, and if your answer was, Yes, I did

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05:31:34 that, what population did you look at and did you
05:31:36 apply it to this beneficiary population?
05:31:46 A. The -- populations -- I mean what I did in this
05:31:52 table here was to estimate the model, but when --
05:32:00 using the controls I stated, but when summing across
05:32:04 individuals to get an estimate for a particular trust
05:32:12 fund, using the aggregate data from the -- from the
05:32:18 trust fund medical expenditures and the data from the
05:32:22 NMES I only summed over those who had health
05:32:24 insurance and those who were in occupations, I
05:32:28 believe, similar to those specified by Dement and
05:32:30 Robert as being considered to be part of workers in
05:32:36 the particular trust funds, so Dement and Roberts,
05:32:42 and particularly Dement, when doing prevalence
05:32:48 calculations for various trust funds used the NHIS
05:32:52 and used particular occupational categories, and so I
05:32:56 used similar occupational categories.
05:32:56 MR. WITHEY: Move to strike as
05:32:58 nonresponsive.
05:33:00 Q. What -- do you know what I mean by healthcare
05:33:04 utilization study? Do you know what that means?
05:33:08 A. Healthcare utilization study?
05:33:10 Q. Yeah.
05:33:12 A. Yeah, I mean studies that have to do with
05:33:14 people's utilization of healthcare.

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05:33:18 Q. Okay. Did the NMES data yield a health -- was
05:33:22 it a -- could it be considered at least in part a
05:33:22 healthcare utilization study?
05:33:26 A. In part.
05:33:30 Q. Okay. And were there -- did you make a
05:33:36 determination that -- that the subjects in NMES in
05:33:38 any different job categories did or did not utilize
05:33:42 healthcare more or less than the beneficiary
05:33:42 population in this case?
05:33:46 A. Well like I mentioned, I guess the answer is no
05:33:50 because I couldn't determine utilization rates for
05:33:52 this population, I didn't have that data.
05:33:56 Q. Now were you working with any medical doctors or
05:34:00 epidemiologists in performing the work on the latex
05:34:00 matter?
05:34:12 A. No, although there were doctors present at my
05:34:16 OSHA presentation and they asked -- they wanted to
05:34:20 see my results and were presenting -- making their
05:34:28 own presentations that they wanted to present my
05:34:28 results at.
05:34:30 Q. Did -- did you submit any of the -- I know that
05:34:30 it hasn't been published yet, --
05:34:32 A. Right.
05:34:34 Q. -- but did you submit any of your work, your
05:34:36 study design, your results, to any medically trained

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05:34:38 person or epidemiologist for review?
05:34:40 A. For review?
05:34:40 Q. Yes.
05:34:46 A. Well, there was a medical doctor that asked for
05:34:50 the same overheads that you wanted because he didn't
05:34:54 -- wasn't reviewing it but he wanted to use it for
05:34:56 some seminar he was presenting on latex.
05:34:58 Q. Before that material is published would you
05:35:04 expect to submit it to a review by medically trained
05:35:06 personnel to determine whether any of the medical
05:35:10 issues or epidemiological issues in that study are
05:35:10 accurately stated?
05:35:16 A. Well I plan to present the paper, and I would
05:35:20 not know who would be in the audience or not. When I
05:35:22 submit it I will, you know, probably incorporate
05:35:26 whatever comments are made, whoever they be, if I
05:35:28 deem them to be, you know, reasonable comments and
05:35:32 presumably, you know -- or potentially wherever I
05:35:36 submit it there may be epidemiologists who are, you
05:35:40 know, the anonymous referees, but I would not know
05:35:40 that.
05:35:42 Q. All right. You would suspect then -- have you
05:35:46 picked a peer-review publication to send it to?
05:35:46 A. Not yet.
05:35:48 Q. All right. You would expect, however, that

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05:35:52 whoever is peer-reviewing the paper that you submit
05:35:54 to the extent to which it does deal with any medical
05:35:58 causation issues would be submitted to some medically
05:36:00 trained person for review?
05:36:02 A. I still believe it depend on which journal I
05:36:08 ultimately send to. I mean if I send it to Journal
05:36:10 of Health Economics, the likelihood of that might be
05:36:10 small.
05:36:12 Q. And how about the work that you described in the
05:36:16 Monday -- what do you call it, the "Monday Effect"?
05:36:18 A. The heart attacks.
05:36:20 Q. Was that work conducted with any people that
05:36:22 were medically trained?
05:36:26 A. My -- no, my coauthor -- or I guess not having
05:36:30 written the paper explicitly, so my co-researcher in
05:36:34 that is an economist also.
05:36:36 Q. Well are there any issues there that -- I
05:36:40 thought that that article has already been published?
05:36:42 A. No, the "Monday Effect" article in terms of
05:36:46 claims for workers' comp. has been published, but
05:36:48 we're working on another --
05:36:48 Q. Oh, I see.
05:36:52 A. That had to do with back injuries mainly. We're
05:36:56 working on another topic that has to do with heart
05:36:58 attacks and what influences or what explains this

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05:37:00 increased incidence of Monday heart attacks.
05:37:04 Q. But in the workers' comp. article that was
05:37:08 published, was there any review by any medically
05:37:08 trained person?
05:37:10 A. The article was written up in several workers'
05:37:12 comp. magazines and stuff, and I don't know if those
05:37:16 people who wrote it up, you know, who wrote a summary
05:37:18 of it were doctors or not.
05:37:20 Q. Was it published in a peer-review journal?
05:37:24 A. Yeah, it was published in a peer-review journal,
05:37:26 but it also appeared in several worker comp. type
05:37:28 magazines and stuff like that.
05:37:30 Q. Do you understand that the Defendants in this
05:37:34 case in Ohio have retained a -- an epidemiologist to
05:37:36 testify, Dr. VerHalen?
05:37:42 A. Yes, I think I heard that.
05:37:42 Q. Have you met him?
05:37:44 A. No, I've never met him.
05:37:48 Q. Have you subjected your opinions, and
05:37:52 particularly your utilization of the NMES database,
05:37:52 to Dr. VerHalen?
05:37:56 A. He may have it, but I didn't directly give it to
05:37:56 him.
05:38:00 Q. Are you interested in what his opinion is about
05:38:04 the use of the NMES database for the purposes in this

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05:38:04 case?
05:38:08 A. What his opinion is?
05:38:10 Q. Yes.
05:38:12 A. I haven't seen his opinion.
05:38:14 Q. I'm not asking have you seen it. I'm asking are
05:38:16 you interested in it?
05:38:18 A. Well if he wants to give me an opinion, I'll
05:38:20 evaluate it.
05:38:24 Q. That's not my question. Are you interested in
05:38:24 it?
05:38:24 MR. McCARTER: Objection; vague.
05:38:26 A. Interested in what sense?
05:38:30 Q. Interested in knowing what Dr. VerHalen thinks
05:38:36 about the use of NMES that you've made or that others
05:38:38 may make of the NMES database?
05:38:42 MR. McCARTER: Same objection.
05:38:48 A. Well in this case I am -- if he makes comments,
05:38:54 I will evaluate those comments, but in particular I
05:38:56 mean I have no overwhelming interest to get his
05:38:58 opinion.
05:39:00 Q. Okay. So basically you have no overwhelming
05:39:04 interest in knowing what Dr. VerHalen thinks about
05:39:08 the use of NMES; fair enough? Is that what I've just
05:39:08 heard you say?
05:39:12 A. Relative to what I've done I've said that his

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05:39:18 particular comments, if I saw them, I may or may --
05:39:22 you know, I guess, you know, there may be some
05:39:26 interest, but then I'd have to evaluate them, but
05:39:28 it's not an overwhelming interest.
05:39:30 Q. Have you ever discussed with any defense lawyer
05:39:34 what Dr. VerHalen said in his deposition about NMES?
05:39:34 A. I don't recall doing that.
05:39:44 Q. Are you interested in the reasoning by an
05:39:50 epidemiologist like Dr. VerHalen about why or how the
05:39:54 NMES data base should or shouldn't be used?
05:39:56 A. Well I guess I'd have to see with regards to
05:39:58 what he is talking about.
05:40:12 Q. Now there was one statement you made in the --
05:40:16 on page 4 of your Supplemental Report I wanted to ask
05:40:18 you about starting with "Moreover" on the top of the
05:40:20 page. Exhibit 4.
05:40:22 A. Which page was it?
05:40:24 Q. Page 4.
05:40:28 A. Page 4, Exhibit 4. Right.
05:40:32 Q. It says, "Moreover, blue-collar workers who
05:40:34 smoke appear to be more likely to work with hazardous
05:40:38 materials at the work-site than blue-collar workers
05:40:40 who don't smoke."
05:40:40 A. Right.
05:41:06 Q. Do you see that? And the cite you give to that

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05:41:10 1 is the Sorensen article about double jeopardy. Do
05:41:10 2 you see that?
05:41:10 3 A. Yes.
05:41:10 4 Q. You've read that?
05:41:12 5 A. At one point I have read it.
05:41:14 6 Q. How long ago?
05:41:18 7 A. Must have been a month ago maybe, month and a
05:41:20 8 half, somewhere in that range.
05:41:26 9 Q. Do you understand the concept of -- by double
05:41:30 10 jeopardy do you understand the concept that certain
05:41:36 11 exposures maybe synergistic or multiplicative?
05:41:38 12 A. I've heard that.
05:41:38 13 Q. In causing disease?
05:41:40 14 A. I've heard that phrase mentioned before.
05:41:44 15 Q. Do you at least have a lay understanding of --
05:41:46 16 of what that means?
05:41:52 17 A. Well I have some understanding of what it
05:41:54 18 potentially may mean.
05:41:58 19 Q. Well what is -- what does it mean to say that
05:42:02 20 multiple risk factors operate synergistically to
05:42:04 21 produce a given disease outcome, if you know?
05:42:10 22 A. Well typically it involves interaction effects.
05:42:12 23 Q. What does that mean?
05:42:18 24 A. Well a synergy would be that -- that having two
05:42:28 25 risk factors -- well, let me I guess back up. The

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addition -- let's take, you know, risk factor A and risk factor B. The change in the relative risk for those who don't have risk factor A but have risk factor B may be different from the change in the relative risk for those who have both risk factor A and risk factor B, compared to those who in the latter case only have risk factor A and in the former case have no risk factor.

Q. Well do you understand that if you're exposed to only one -- let's take two risk factors. If you're exposed to one risk factor, you may have a relative risk for that; fair enough, between those who are not exposed to that; correct?

A. If you have one risk factor, right, there's that, yeah.

Q. And then if you take the second risk factor, you could separately analyze the relative risk of that risk factor in disease between those who were exposed versus nonexposed; correct?

A. Correct.

Q. And then if you are exposed to both of those factors, both of the two factors, in other words, then you could calculate a risk factor for your exposure to both of them; correct?

A. Correct.

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05:43:54 Q. As opposed to those who are not exposed to
05:43:56 either of them; correct?
05:43:56 A. Right.
05:43:58 Q. And do you understand by synergism or
05:44:04 multiplicative effect that the third risk factor, the
05:44:08 one of the person exposed to both risk factors, is
05:44:08 greater by -- is greater than the risk factors of
05:44:18 separate exposure to each of those; correct, or do
you know?
05:44:24 A. Well the -- there is a chance that having --
05:44:30 those who have both exposures, the -- they have a
05:44:32 particular risk factor that's different than those
05:44:34 who have one or the other.
05:44:36 Q. But do you understand that the term "synergism"
05:44:40 means that that -- that the risk factor if you're
05:44:42 exposed to both of them exceeds the risk factor that
05:44:48 you would have for either one or the other separate?
05:44:48 Do you understand that?
05:44:52 A. Well I -- if you have both, compared to what
05:44:54 though? That's what I'm --
05:44:56 Q. Compared to just having one. Let's -- do you
05:45:00 understand that some workers have been exposed to
asbestos?
05:45:02 A. Yes.
05:45:06 Q. And that some smokers have been exposed to

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05:45:10 asbestos an nonsmokers have been exposed to asbestos; fair enough?
05:45:10 A. Correct.
05:45:12 Q. And do you understand there's a relative risk of being a smoker who is not exposed to asbestos for lung cancer?
05:45:16 A. Correct.
05:45:22 Q. And you understand there's a relative risk for someone who is exposed to asbestos but is not a smoker?
05:45:30 A. Correct.
05:45:30 Q. All right. As opposed to someone who is exposed to neither one, there's a relative risk there; correct?
05:45:34 A. Compared to?
05:45:36 Q. Someone not exposed to asbestos.
05:45:38 A. Just not exposed to asbestos.
05:45:40 Q. In other words, someone exposed to asbestos is at a higher risk of developing lung cancer than someone who is not exposed to asbestos; correct?
05:45:44 A. When you say "not exposed" you're holding what fixed?
05:45:46 Q. Nothing. I'm just saying a person that is exposed to asbestos has a higher risk of developing lung cancer than someone who is not exposed to
05:45:48
05:45:52
05:45:54
05:45:58
05:46:02
05:46:04

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05:46:04 asbestos; correct?
05:46:06 A. Not necessarily.
05:46:08 Q. You mean you don't believe that asbestos is
05:46:10 associated with lung cancer?
05:46:14 A. You said that you did not care about anything
05:46:16 fixed.
05:46:24 Q. Do you understand that asbestos causes lung
cancer?
05:46:26 A. Yeah, but I asked you holding what factors
fixed? You said just whether that person had
exposure --
05:46:26 Q. Versus nonexposure.
05:46:30 A. Right, there are different other factors.
05:46:34 Q. Okay. I can see -- do you understand what a
05:46:38 relative risk means, that you're taking a given
05:46:40 disease, lung cancer, and you're looking at whether
05:46:42 there's a relative risk between someone who is
05:46:46 exposed to -- I'm sorry -- if you're exposed to that
05:46:48 element, in this case, asbestos, versus not exposed
05:46:52 to that element and whether there's a difference in
05:46:54 the incident of lung cancer. Do you understand
05:46:56 that's what a relative risk does?
05:46:58 A. You could -- I mean by your definition are you
05:47:02 saying that what we do is just compare the average
05:47:04 for those who are exposed versus those who aren't

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05:47:08 exposed in terms of prevalence?
05:47:10 Q. Define relative risk, if you know?
05:47:14 A. Well the question is you can estimate relative
05:47:16 risk by controlling for confounding, you can estimate
05:47:18 relative risk by not. I'm wondering what you're
05:47:20 assuming.
05:47:22 Q. I'm asking: Do you know what the term "relative
05:47:22 risk" means?
05:47:24 A. Yes. It would be the -- the general term would
05:47:34 be to look at the proportion of those who are -- have
05:47:38 a disease -- I mean who are exposed to,
05:47:40 quote-unquote, "some risk factor" compared to the
05:47:44 proportion without the disease who aren't.
05:47:44 Q. All right.
05:47:48 A. Now the question though is what that means.
05:47:50 Q. Is there a relative risk -- I want to talk about
05:47:52 causation for a second. Is there a relative -- if
05:47:56 someone is exposed to asbestos, do they have a
05:48:04 relative risk of getting lung cancer as compared to
05:48:10 someone who is not exposed to asbestos?
05:48:12 A. Again --
05:48:16 MR. McCARTER: Objection; vague.
05:48:22 A. -- you'd have to elaborate on how you determine
05:48:22 that.
05:48:28 Q. All right. And let me just ask you to assume

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05:48:36 that if you're exposed to asbestos you have a higher
05:48:38 risk of developing lung cancer than if you're not
05:48:40 exposed to asbestos, everything else being equal.
05:48:40 Can you assume that?
05:48:40 A. Okay.
05:48:42 Q. I guess you don't know that though; is that
correct?
05:48:44 A. Well, no, I -- you at one point just said
05:48:46 everything equal, but you never said that before, so
05:48:48 the question is they could be different on a number
05:48:48 of characteristics.
05:48:48 Q. Okay.
05:48:50 A. And even if it, quote-unquote, "caused a
05:48:54 disease," had, you know, a true effect, it could be
05:48:54 confounded.
05:48:56 Q. I'm not asking about confounding. I'm just
05:48:58 asking about -- right now I'm asking about your
05:49:00 understanding of relative risk. Okay.
05:49:00 A. Right.
05:49:02 Q. So assume that the risk of getting lung cancer
05:49:04 is greater if you had a history of asbestos exposure
05:49:08 than if you hadn't, everything else being equal?
05:49:08 A. The risk --
05:49:08 Q. And assume that if you --
05:49:10 A. Let me just clarify when you say "risk" you mean

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05:49:10 the probability.
05:49:14 Q. I'm talking about risk in the sense that risk
05:49:16 factors, relative risk, the risk and association of
05:49:18 getting disease because of your exposure to that
05:49:20 factor. Okay.
05:49:22 A. Well I'm unclear because there could be
05:49:24 differences in risk and relative risk.
05:49:28 Q. Well sure there's differences. One is absolute
05:49:30 and one is relative; right?
05:49:34 A. Right, so I just want to be clear about when
05:49:36 you're making statements about risk and when you're
05:49:38 making statements about relative risk.
05:49:40 Q. All right. I'll use those terms. I want you to
05:49:44 -- and you understand that if you are a smoker
05:49:46 versus a nonsmoker you have a higher risk of
05:49:48 developing lung cancer; correct?
05:49:52 A. I haven't examined that in detail, but I'll take
05:49:54 -- I mean that's my understanding.
05:49:56 Q. Well you understand that the relative risks of
05:50:00 smoking and lung cancer are in the Surgeon General's
05:50:02 report for various ages and sex, et cetera; right?
05:50:04 A. Right.
05:50:06 Q. Okay. Now I'm asking if you have an
05:50:08 understanding that if you are exposed to both
05:50:12 asbestos and to lung cancer --

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05:50:14 MR. McCARTER: Smoking.

05:50:16 Q. Strike that.

05:50:20 If you're exposed to asbestos and to smoking, is your relative risk of developing lung cancer higher than both smoking -- the relative risk of smoking and lung cancer and the relative risk of asbestos exposure and lung cancer, if you know?

05:50:36 A. Well I don't know, but it could be.

05:50:38 Q. All right. And is the higher --

05:50:42 A. Compared -- and again you have to keep reminding me what the denominator is. Is the denominator a nonsmoker, non-asbestos person or a smoker, non-asbestos person?

05:50:54 Q. Yes, it's a nonsmoker, non-asbestos exposure.

05:50:54 A. Okay.

05:50:58 Q. And do you understand by the term "synergistic" or "multiplicative effect" that the added relative risk you get from exposure to smoke and asbestos is a multiplier of the relative risk if you're only exposed to each individually?

05:51:18 A. So you're saying that there is an interaction effect that's positive in a relative risk equation?

05:51:30 Q. Well the relative risk equation and the absolute risk, that it's multiplicative. In other words, let's say as a smoker your relative risk of getting

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05:51:44 lung cancer is 10, okay. As someone exposed to
05:51:46 asbestos your relative risk of getting lung cancer is
05:51:50 5 relative to someone who is not exposed to that. Do
05:51:52 you understand that the relevant risk if you're
05:51:56 exposed to both asbestos and smoking is 50, for
05:51:56 instance, as opposed to 15?
05:51:58 A. I don't know the exact numbers.
05:52:00 Q. But do you understand the concept, that that's
05:52:00 what --
05:52:02 A. Well I want to be clear about whether you're
05:52:06 talking about risk or relative risk and whether your
05:52:10 definition of synergy involved an interaction termed
05:52:14 in sort of, quote-unquote, "model" of risk or
05:52:16 relative risk because the two aren't equivalents.
05:52:20 Q. Are you familiar, have you read any of the
05:52:24 epidemiological literature on asbestos and lung
cancer?
05:52:26 A. I can't recall.
05:52:28 Q. Have you read any of the epidemiological
05:52:32 literature on exposure to hazardous materials at work
05:52:32 sites and any diseases?
05:52:40 A. Well I mean there's papers here that talk about
05:52:44 exposure to hazardous work sites.
05:52:46 Q. Other than that paper that I just read to you,
05:52:48 the "Double Jeopardy" paper?

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05:52:56 A. Right. I'm trying to think if they've directly
05:52:58 done it or just mentioned it as probable causes in
05:53:02 sort of indirect estimates. I can't recall any
05:53:04 direct estimates off the top of my head.
05:53:06 Q. If you assume that the smokers have the same
05:53:10 exposure to the hazardous material at the job sites
05:53:16 in these studies as the nonsmokers. You follow me?
05:53:18 A. Yeah.
05:53:20 Q. And you assume that the exposures are
05:53:24 interactive in causing disease, are you following me,
05:53:28 in the way you've defined it, multiplicative?
05:53:32 A. In causing the probability of disease?
05:53:32 Q. Yes.
05:53:32 A. Yes.
05:53:36 Q. You understand what I'm saying. In those
05:53:38 circumstances isn't it true that the model used by
05:53:42 Dement and Roberts would underestimate the population
05:53:44 attributable risk of smoking and those diseases?
05:53:46 MR. McCARTER: Objection; incomplete
05:53:48 hypothetical.
05:53:50 A. Well my understanding if it's looking at -- if
05:53:52 you're estimating a model with two risk factors, say,
05:53:58 and looking at the probability of occurrence and
05:54:02 there's interaction effect in the probability of
05:54:08 occurrence; i.e., when you put in an interaction

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05:54:14 variable it say is significantly positive, it still
05:54:18 doesn't necessarily imply that there's a synergy in
05:54:18 the relative risk.
05:54:20 Q. But you understand if there is a synergy, then
05:54:26 the population of attributable risk utilized by John
05:54:30 Dement, and the smoking-attributable fractions
05:54:34 derived by John Dement would underestimate the true
05:54:38 risk of smoking and those diseases, again assuming
05:54:42 that smokers and nonsmokers are exposed equally to
05:54:44 the supposed work site hazard?
05:54:46 MR. McCARTER: Same objection.
05:54:48 A. Well, I mean are you assuming that he's done
05:54:50 everything else right?
05:54:54 Q. No. Just assuming that he -- that the -- that
05:54:56 he or anybody --
05:54:56 A. Well if I get --
05:54:58 Q. -- that computes the population of attributable
05:55:02 risk in the way he's done or the smoking-attributable
05:55:06 fraction for disease, if there's is a synergistic
05:55:08 effect the way he's done it, would underestimate the
05:55:10 smoking portion of that -- of the disease?
05:55:14 MR. McCARTER: Same objection.
05:55:14 A. Not necessarily.
05:55:14 Q. You're sure about that?
05:55:18 A. Because if his model is wrong, he's getting a

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05:55:22 biased estimate, then it would all depend on the
05:55:22 extent of the bias.
05:55:26 Q. Let's take John Dement out. If anybody were to
05:55:34 utilize a -- the Surgeon General's attributable risk
05:55:40 formula and apply it to a situation in which
05:55:44 nonsmokers and smokers are exposed in equal numbers
05:55:50 to a work site hazard, okay, then -- and that work
05:55:54 site hazard was interactive with, multiplicative
05:55:58 with, synergistic with smoking to cause a particular
05:56:04 disease, such as asbestos and smoking, that utilizing
05:56:08 the population-attributable risk just for smoking
05:56:12 would underestimate the impact of smoking on the --
05:56:12 the mortality for those diseases?
05:56:16 MR. McCARTER: Same objection; vague also.
05:56:16 Q. If you can answer it.
05:56:24 A. Assuming they did everything else right, --
05:56:24 Q. Yeah.
05:56:26 A. -- the only difference was that they didn't have
05:56:32 the interaction effect, they would have a biased
05:56:34 estimate.
05:56:38 Q. Biased toward the null or biased away from the
05:56:40 null?
05:56:42 A. Well the problem I have is that if it's a model
05:56:44 of the probability of the occurrence of a disease,
05:56:48 then it's an empirical question of whether bias in

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05:56:52 terms of relative risk is in one direction or the
05:56:54 other even if the bias with regard to the absolute
05:56:56 risk is in one direction.
05:56:58 Q. I'm talking about attributable --
05:57:02 population-attributable risk, not the relative risk.
05:57:04 Maybe you've never done this or maybe you don't know
05:57:06 exactly what I'm asking you.
05:57:12 A. No. The problem is is that you're estimating
05:57:14 the -- the probability of occurrence of a disease
05:57:20 which is in turn used to calculate a relative risk
05:57:24 which is in turn used to calculate the
05:57:32 smoking-attributable fraction, then, you know, it's
05:57:36 going to -- the bias, you're going to have to worry
05:57:38 about the bias induced in the relative risk also.
05:58:02 Q. I don't know. All right. I probably asked you
05:58:06 this before, but if I did, I apologize. I take it
05:58:14 you understand that after age 65 a significant
05:58:18 portion of the beneficiaries in this case go onto
05:58:22 Medicare and do not utilize the trust fund for
05:58:24 medical expenditures; correct?
05:58:26 A. Well what I know is in looking at the claims
05:58:30 data, and I think I mentioned this before --
05:58:30 Q. You probably did.
05:58:32 A. -- is that roughly 80 percent of the total
05:58:40 claims is coming from people 34 to 65 and 20 percent

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05:58:44 -- when you're looking at 35 and over, 30 -- about
05:58:48 80 percent is between 35 and 64, and 20 percent is
05:58:54 for -- over 65. I don't have the data on -- on
05:58:58 whether they're covered by Medicare. I mean the --
05:59:04 yeah, what expenditures, you know, the -- and the
05:59:06 copayments and that sort of stuff are being paid by
05:59:06 Medicare.
05:59:10 Q. Would you agree that even if, as you've
05:59:12 testified, life long expenditures between -- medical
05:59:16 expenditures between smokers and nonsmokers are
05:59:22 roughly the same, that that conclusion doesn't
05:59:28 necessarily apply that they're the same to a trust
05:59:32 fund where the persons who live to age 65 in the
05:59:36 beneficiary population go on to Medicare in numbers
05:59:42 of 80 percent and the trust fund no longer pays for
05:59:42 the medical expenses?
05:59:50 A. Well, I don't know if it's the case here if --
05:59:54 what I would like to do if I were asked to do this
05:59:56 and not just asked to comment on somebody else's
06:00:00 model would be to again get data from the trust fund
06:00:04 and track those people over time, and if the amount
06:00:06 that the trust fund paid drops substantially when
06:00:10 they turned 65, that would automatically be
06:00:14 accounted, and let the numbers speak for themselves
06:00:16 whether it's a positive -- you know, a relative risk

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06:00:20 of medical expenditures over 1 or less than 1. That
06:00:22 would be what the data -- I would like to do it with
06:00:26 the trust fund data and do some additional surveys.
06:00:28 Q. Have you asked to do that?
06:00:28 A. I wasn't asked to do that.
06:00:32 Q. Have you asked to do that is the question?
06:00:34 A. I haven't asked to do that, no.
06:00:36 MR. McCARTER: Are you offering the data?
06:00:40 MR. WITHEY: I'm just -- that's what
06:00:42 discovery is for. If you had asked for it soon
06:00:44 enough, you might have gotten it.
06:00:46 Q. My question is, and it's the last question I
06:00:50 have, is: Does the statement that the medical
06:00:58 expenditures of these beneficiaries in the trust fund
06:01:04 population for the State of Ohio are the same for
06:01:12 smokers and nonsmokers apply if the persons who reach
06:01:18 age 65 go onto Medicare in percentages of 80 percent
06:01:22 to 20 percent; in other words, 80 percent going onto
06:01:28 Medicare, and thus the trust for those 80 percent of
06:01:30 the people no longer pay the medical expenses of
06:01:30 those people?
06:01:36 A. Well I don't know in regard to ever making some
06:01:38 sort of statement that the total cost within that
06:01:44 trust fund was exactly the same over all provider
06:01:50 payments, but since I -- I don't think I ever

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06:01:54 estimated a lifetime model for the particular trust
06:02:02 funds, but you would want to pay attention to who
06:02:06 actually is paying at a particular point in time.
06:02:10 Q. Okay. Including what the trust fund's paying
06:02:10 for --
06:02:10 A. Or --
06:02:14 Q. -- beneficiaries over age 65; that would be one
06:02:16 thing you'd want to look at?
06:02:18 A. In a lifetime approach, right.
06:02:20 Q. And why would that be important to a lifetime
06:02:20 approach?
06:02:22 A. Well it would be important in a damage
06:02:24 approach. I've gone through other aspects of a
06:02:28 damage approach that, you know, if you're looking at
06:02:30 behavior and you're looking at the damages to a
06:02:32 particular party for that behavior over time, then
06:02:36 you should, you know, focus on the payments that that
06:02:38 party made and not other parties.
06:02:40 Q. Okay. "Other parties" meaning?
06:02:42 A. Potentially Medicare.
06:02:42 MR. WITHEY: Okay. I got nothing further.
06:02:46 Do you have anything?
06:02:46 MR. McCARTER: I have no questions.
(The deposition was in recess at 4:21 p.m.)
(Reporter's Note: Space has been reserved

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in the Index for McCall Exhibits 6, 7, 8, and 10, as identified herein, per instructions of counsel.)

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C E R T I F I C A T E

I, Judy A. Steinke, hereby certify that I am qualified as a verbatim shorthand reporter; that I took in stenographic shorthand the testimony of BRIAN P. McCALL, Ph.D., at the time and place aforesaid; and that the foregoing transcript, Volume I, consisting of pages 1 through 267, is a true and correct, full and complete transcription of said shorthand notes, to the best of my ability.

Dated at Deerwood, Minnesota, this 1st day of February, 1999.

Judy A. Steinke
Shorthand Reporter
Notary Public

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S I G N A T U R E P A G E

I, BRIAN P. McCALL, Ph.D., the deponent, hereby certify that I have read the foregoing transcript, Volume I, consisting of pages 1 through 267, and that said transcript is a true and correct, full and complete transcription of my deposition, except per the attached corrections, if any.

(Please check one.)

_____ Yes, changes were made per the attached (#) _____ Signature Page Addendums.

_____ I have made no changes.

BRIAN P. McCALL, Ph.D.
Deponent

Sworn and subscribed to before me this day of

, .

Notary Public

My commission expires .

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November 1998

Curriculum Vitae

Brian P. McCall

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Office phone: (612) 624-9521
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McCall Exhibit 1
Date 1-29-99
Judy A. Steinke
Shorthand Reporter

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Education:

Ph.D. Economics, Princeton University, 1988

M.A. Economics, Princeton University, 1986

B.A. Economics, University of California, Los Angeles, 1981. Graduated *summa cum laude*. Elected to Phi Beta Kappa.

Research Interests:

Applied Econometrics, Econometric Theory, and Labor Economics

Professional Experience:

1998- Curtis L. Carlson Professor of Human Resources and Industrial Relations, University of Minnesota.

1995- Associate Professor of Industrial Relations, University of Minnesota.

1994- Associate Fellow, Minnesota Supercomputer Institute.

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1990- Adjunct Associate, Hubert H. Humphrey School of Public Affairs, University of Minnesota.

1988-1995 Assistant Professor of Industrial Relations, University of Minnesota.

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Teaching Experience:

Taught managerial economics in the Executive MBA program at Warsaw School of Economics, 1996.

Taught microeconomics at the Summer School for Economics, Supraśl, Poland, 1992.

University of Minnesota:

MAIR and PhD
Introduction to Quantitative Methods for Industrial Relations
Intermediate Quantitative Methods for Industrial Relations
Advanced Quantitative Research Methods for Industrial Relations
Introduction to Labor Market Analysis
Topics in Micro Labor Market Analysis
Seminar: Analysis of Current Labor Market Theory and Empirical Research
Seminar: Compensation and Reward
MA Oral Examination Committees in Hubert Humphrey School of Public Affairs and Industrial Relations
Supervised Plan B papers for MAIR students
Dissertation Committees in Agricultural and Applied Economics, Economics, Industrial Relations, Psychology, School of Public Health, and Sociology.

Faculty Participation: Bush Faculty Development Program for Excellence in Teaching, University of Minnesota, 1992-93.

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Princeton University:

Undergraduate
Financial Economics
Microeconomics

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Honors, Fellowships, and Awards:

The Herbert G. Heneman Jr. Distinguished Teaching Award ("The Herbie") "presented in recognition of teaching excellence" by the students of the Industrial Relations Center, University of Minnesota, 1992-1993 and 1994-1995.

Publications:

Steve DesJardins, Dennis Ahlburg, Brian P. McCall, 1998, "An Event History Model of Student Departure," Economics of Education Review, forthcoming.

Brian P. McCall, 1998, "Repeat Use of Unemployment Insurance," Research in Employment Policies Vol. 2, Laurie J. Bassi and Stephen A. Woodbury eds., JAI Press, forthcoming.

Brian P. McCall, 1998, "The Incentive Effects of Partial Unemployment Rules," Research in Employment Policies Vol. 1, Laurie J. Bassi and Stephen A. Woodbury eds., JAI Press, pages 157-181.

Brian P. McCall, 1997, "The Determinants of Full-time versus Part-time Re-employment following Displacement," Journal of Labor Economics, 15, 714-734.

John W. Budd and Brian P. McCall, 1997, "The Effect of Unions on the Receipt of Unemployment Insurance Benefits," Industrial and Labor Relations Review, 50, 478-491.

Brian P. McCall, Marcie Cavanaugh, Richard Arvey, and Paul Taubman, 1997 "Genetic Influences on Job and Occupational Switching" Journal of Vocational Behavior, 50, 60-77.

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Brian P. McCall, 1996, "The Identifiability of the Mixed Proportional Hazards Model with Time-Varying Coefficients," Econometric Theory, 12, 733-738.

Brian P. McCall, 1996, "Unemployment Insurance Rules, Joblessness, and Part-time Work," Econometrica, 64, 647-682.

David Card and Brian P. McCall, 1996, "Is Workers' Compensation Covering Uninsured Medical Costs? Evidence from the 'Monday Effect'" Industrial and Labor Relations Review, 49, 690-706.

Brian P. McCall, 1995, "The Impact of Unemployment Insurance Benefit Levels on Recipiency," Journal of Business and Economic Statistics, 13, 189-198.

Brian P. McCall, 1994, "Testing the Proportional Hazards Model in the Presence of Unmeasured Heterogeneity," Journal of Applied Econometrics, 9, 321-334.

Brian P. McCall, 1994, "The Effect of Job Heterogeneity on Reservation Wages," International Economic Review, 35, 773-791.

Brian P. McCall, 1994, "Specification Diagnostics for Duration Models: A Martingale Approach," Journal of Econometrics, 60, 293-312.

Richard Arvey, Brian McCall, Thomas Bouchard, Paul Taubman, and Marcie Cavanaugh, 1994, "Genetic Influences on Job Satisfaction and Work Values," Personality and Individual Differences, 17, 21-33.

Brian P. McCall, 1992, "A Note on the Identifiability of a Dynamic Binary Choice Model with State Dependence," Economic Letters, 40, 273-281.

Brian P. McCall, 1991, "A Dynamic Model of Occupational Choice," Journal of Economic Dynamics and Control, 15, 387-408.

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Brian P. McCall, 1990, "Interest Arbitration and the Incentive to Bargain: A Principal-Agent Approach," Journal of Conflict Resolution, 34, 151-167.

Brian P. McCall, 1990, "Occupational Matching: A Test of Sorts," Journal of Political Economy, 98, 45-70.

Brian P. McCall and John J. McCall, 1987, "A Sequential Study of Migration and Job Search," Journal of Labor Economics, 5, 452-476.

Brian P. McCall and John J. McCall, 1981, "Systematic Search, Belated Information, and the Gittins' Index," Economic Letters, 327-333.

Book Chapters and Proceedings

John Fossum and Brian P. McCall, 1997, "Pay and Reward for Performance," in Handbook of Human Resource Management: Part III, Lewin, Mitchell, and Zaidi eds., JAI Press, 111-143.

Brian P. McCall, 1994, "Identifying State Dependence in Durations Models," American Statistical Association 1994 Proceedings of the Business and Economics Section, 14-17.

Brian P. McCall, 1990, "An Empirical Analysis of Youth Joblessness Durations," in Proceedings of the Forty-Second Annual Meeting of the Industrial Relations Research Association, 603-610.

Government Publications

Brian P. McCall, 1996, "Repeat Use of Unemployment Insurance," in Advisory Council on Unemployment Compensation: Background Papers, Vol. III ACUC, U.S. Department of Labor.

Brian P. McCall, 1995, "The Incentive Effects of Partial Unemployment Rules," in Advisory Council on Unemployment Compensation: Background Papers, Vol. III ACUC, U.S. Department of Labor.

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Book Reviews:

Multi-armed Bandit Allocation Indices. By J.C. Gittins. John Wiley & Sons, Chichester, 1989. SIAM Review, 33, 1991, 154-155.

Working Papers:

John W. Budd and Brian P. McCall, 1998, Decomposing Changes in The Retail Food Wage Distribution, 1983-1993: A Semi-Parametric Analysis (in preparation).

Chun Chang, Brian McCall, and Yijiang Wang, 1998, "The Link between Property Rights and Performance: Evidence from China's Rural Enterprises," (in preparation).

John W. Budd and Brian P. McCall, 1998, "Unions and Unemployment Insurance Benefit Receipt: Evidence from the CPS," mimeo.

Dennis A. Ahlburg, Brian P. McCall, and In-gang Na, 1998, "Time to Dropout from College: A Hazard Model with Endogenous Waiting," mimeo.

Deborah L. Kidder and Brian P. McCall, 1997, "Re-employment Patterns of Male and Female Displaced Workers," Supercomputer Institute Research Report 97/221, University of Minnesota.

Rachel Connelly, Deborah Degraff, Deborah Levison, and Brian McCall, 1998, Tackling Endogeneity: Alternatives for the Analysis of Women's Employment and Child Care in Brazil," mimeo.

Brian P. McCall, 1997, "The Non-Parametric Identifiability of a Competing Risks Model with Regressors," mimeo, University of Minnesota (currently being revised).

David Card and Brian P. McCall, 1996, "When to Start a Fight and When to Fight Back: Liability Disputes in the Worker's Compensation System," mimeo (currently being revised).

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Brian P. McCall, 1991, "A Theory of Job Search and Learning," mimeo, University of Minnesota.

Grants:

1989	Research Grant, McKnight Foundation ($4,667).
1989	Research Grant, the Conflict and Change Center ($3,537).
1992	University's Faculty Summer Research Fellowship ($4,000)
1992	Research Grant, McKnight Foundation ($14,222)
1993	University's Faculty Summer Research Fellowship ($4,000)
1993	Research Grant, McKnight Foundation ($7,294)
1990-95	Resource Grants, Minnesota Supercomputer Institute.
1994	U.S. Department of Labor ($20,580)
1995	U.S. Department of Labor ($21,000)
1996	Northwest Area Foundation ($250,000)
1997	Sloan Foundation ($47,433)

Professional Activities:

Referee:

American Economic Review
Bulletin of Economic Research
Econometrica
Economica
Economic Development and Cultural Change
Economic Journal
Economics of Education Review
Industrial and Labor Relations Review
Information Economics and Policy

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International Economic Review
Journal of Business and Economic Statistics
Journal of Conflict Resolution
Journal of Econometrics
Journal of Economic Dynamics and Control
Journal of Human Resources
Journal of Labor Economics
Journal of Operations Management
Journal of Political Economy
Journal of Population Economics
Lifetime Data Analysis
Quarterly Journal of Economics
Review of Economics and Statistics
National Science Foundation
Social Sciences and Humanities Research Council of Canada
John Wiley & Sons
Conference submissions.

Conferences and Seminar Presentations:

Unions and the Labor Market, Conference in Conjunction with the 50th Anniversary of the Industrial Relations Center, University of Hawaii, Honolulu Hawaii, 1998.
Advisory Council on Unemployment Compensation's Research Sloan School of Management, MIT, 1997.
Conference on Reform of the Unemployment Insurance System, Burlington, Vt., 1995.
Milken Institute, Santa Monica, CA, 1995.
University of Virginia, 1995.
North American Winter Meeting of the Econometric Society, Washington, 1995.
National Council on Compensation Insurance's 13th Annual Conference on Economic Issues in Workers' Compensation, The Wharton School, University of Pennsylvania, 1994.
Advisory Council on Unemployment Compensation's Research Conference on Reform of the Unemployment Insurance System, Portland, Maine, 1994.
American Statistical Association Meetings, Toronto, 1994.
Interdisciplinary Conference on Bargaining and Dispute Settlement, University of Wisconsin-Madision, 1994
North American Winter Meeting of the Econometric Society, Boston, 1994.

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Discussant, North American Winter Meeting of the Econometric Society, Boston, 1994.
Michigan State University, 1993
Cornell University, 1993.
National Bureau of Economic Research, 1993,1994.
Carnegie Mellon/ University of Pittsburgh, 1993.
Princeton University 1987, 1988 (twice), 1992, 1993.
University of Minnesota 1988,1989,1990,1991,1993.
North American Summer Meeting of the Econometric Society, Seattle, 1992.
International Federation of Automatic Control's Workshop on Econometric Time Series Analysis and Systems Identification, Vienna, 1992.
Dartmouth College 1991.
University of California, San Diego 1990.
Discussant, American Economic Association's Annual Meeting, Atlanta, 1989.
Annual Meeting of the I.R.R.A., Atlanta, 1989.
Texas A&M 1988.
Rice University 1988.
University of California, Irvine 1988.
Federal Reserve Board of Governors 1988.
Rand Corporation 1988.

Member:

Econometric Society, American Statistical Association, American Economic Association. Institute of Mathematical Statistics.

Consulting:
Arnold & Porter
Briggs & Morgan
Dorsey & Whitney
Fulbaber Larson Fenlon & Vogt
Gollé & Holmes
J.C. Penney
McDermott Will & Emery
Rider, Bennett, Egan & Arundel
U.S. Department of Labor

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Cases:

State of Massachusetts v. Phillip Morris Incorporated et al.
Northwest Laborers-Employers Health and Security Trust Fund et al. v. Phillip Morris Incorporated et al.
Bolt and Kreatz v. J.C. Penney
State of Arizona v. American Tobacco et al.
State of Washington v. American Tobacco et al.
Steadfast Insurance Co. v. St. Jude Medical, Inc.
State of Minnesota and Blue Cross and Blue Shield of Minnesota v. Phillip Morris Incorporated et al.
McCashin v. Alliant Techsystems Inc.
Hogendorf-Brodeen v. Paychex, Inc.
Porter v. Honeywell
Bevan v. Honeywell
Burns v. Control Data Corporation
Kolbow v. Honeywell
Landon v. Northwest Airlines, Inc.
Weiss v. Boliden Allis, Inc. and Svedala Industries, Inc.
Haenudeen and Hines v. Onan Corporation and Mattsen

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McCall Exhibit 2
Date 1-29-99
Judy A. Steinke
Shorthand Reporter

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Smoking Attributable Health Care Costs: Iron Workers Local No. 17 Insurance Fund et al. v. Phillip Morris, Inc. et al.

Expert report of Brian P. McCall, Ph.D.

November 6, 1998

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A. Introduction

I was retained by the counsel for the defendants to review plaintiffs' experts' estimates of the Iron Workers Local No. 17 Insurance Fund et al. (referred to subsequently as the "Insurance Funds") health-care spending attributable to alleged misconduct in the Iron Workers Local No. 17 Insurance Fund et al. v. Phillip Morris, Inc. et al. case.

The methods I use are commonly employed in economics and statistics and reflect my training and experience in those fields. Attached to this report is my current curriculum vitae which lists my qualifications.

B. Summary of Opinions

I have reviewed the reports prepared by Dr. John Dement (September 29, 1998), Dr. Jeffery Harris (October 12, 1998), Dr. Michael Lauer (not dated), and Mr. Stanley Roberts (October 8, 1998). The methods and assumptions employed by Dr. Dement and Mr. Roberts to calculate damages are inappropriate and result in invalid estimates of the damages incurred by the plaintiffs as a result of the alleged wrongful conduct of the defendants. The basic methodological approach used by Dr. Dement and Mr. Roberts to calculate damages is flawed. Moreover, in applying this methodology Dr. Dement and Mr. Roberts make additional errors which lead to an over-estimate of damages. Dr. Harris and Dr Lauer's reports offer no compelling evidence that supports the notion that the estimates of Dr. Dement and Mr. Roberts are, in fact, "conservative".

- Dr. Dement and Mr. Roberts employ an attributable risk model to assess the

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damages incurred by the plaintiffs as a result of the alleged wrongful conduct of the defendants. Yet the attributable risk model is an inappropriate model for calculating damages in this case.

- Dr. Dement's and Mr. Roberts' approach attributes all smoking-related medical expenditures to the defendants' alleged misconduct. They do not attempt to deduct from their damage estimate those smoking-related expenditures that would have still occurred had the defendants not engaged in their alleged wrongful conduct.
- The attributable risk approach used by plaintiffs' experts depends on both smoking prevalence and relative risk. For a set of smoking-related conditions, Dr. Dement and Mr. Roberts base their relative risk estimate of medical expenditures for smokers on mortality differences between smokers and non-smokers instead of, more appropriately, basing it on medical expenditure differences between smokers and non-smokers.
- Dr. Dement and Mr. Roberts study the wrong population when calculating the relative risks. Their relative risk calculations are based on mortality data from the American Cancer Society's: Cancer Prevention Study II. The characteristics of this population bear little resemblance to the characteristics of the population at issue in this litigation.
- Dr. Dement and Mr. Roberts do not properly account for potential confounders in their analyses. This may lead to an over-estimate of damages.
- While Dr. Harris admits that the mortality ratio approach may either over-estimate

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or underestimate the corresponding spending ratios, he states that overall it is likely to be a conservative estimate since it ignores expenditures for conditions not contained in the 1989 Surgeons General Report. To support such a conclusion he calculates an overall smoking attributable fraction (SAF) of 9.1% which exceeds the overall SAF of 5.9 % based on the mortality ratio approach. However, his determination of the 9.1% SAF is flawed and not applicable in this case. While Dr. Lauer presents some evidence that smokers are more likely to suffer from both fatal and non-fatal heart-attacks than non-smokers, he presents no statistical evidence relating to smokers' costs of medical treatment over time as compared to non-smokers costs of medical treatment over time, even for coronary heart disease. Thus, it is unclear how his report bears on the question of whether or not the mortality ratio approach yields a conservative estimate for smoking attributable expenditures, even those associated with coronary heart disease.

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Opinions

In the standard attributable risk mathematics, the proportion of all spending attributable to smoking is given by

$$s = (r - 1)p / [1 + (r - 1)p]$$

where r denotes the relative risk of medical expenditures for smokers (as compared to non-smokers) and p denotes smoking prevalence. Employing a wide variety of

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assumptions, this formula purports to estimate the fraction of medical costs actually spent in a given year that are attributable to past and current smoking behavior. It does not, however, produce reliable estimates of how particular changes in smoking behavior would affect medical payments over time for health insurance providers such as the Insurance Funds. Reliable estimates of the effects of changes in smoking behavior on the health expenditures of such providers are crucial for assessing the damages incurred by the plaintiffs due to the defendants' alleged misconduct.

The appropriate approach would calculate, for every smoker in each birth cohort, what they actually cost the Insurance Funds over the relevant time period and what they would have cost the Insurance Funds over the relevant time period had the defendants not engaged in their alleged wrongful conduct.

To estimate these latter "counterfactual" costs, one would have to estimate how the defendants' alleged wrongful actions affected flows of information about their products. Next, one would have to estimate how these differential flows of information would have impacted the smoking behavior of individuals in the Insurance Funds and the behavior of the Insurance Funds in attempting to alter individual smoking behavior. Finally, one would need to estimate how these changes in smoking behavior would affect an individual's medical expenditures over time and, in particular, how they would affect medical expenditures covered by the Insurance Funds over time. The difference between actual and counterfactual costs would be calculated for every individual within each birth cohort. These differences would then be aggregated across individuals and birth cohorts over (calendar) time to calculate total damages.

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Dr. Dement and Mr. Roberts do not employ such an approach. To the extent that changes in behavior, due to the alleged wrongful conduct of the defendants, change individual health costs over time, the attributable risk approach will not reliably calculate damages.

To see this, consider the following simple example: suppose that there are only two times at which people incur medical expenditures (which are paid by the Insurance Funds). Assume that 75% of all smokers incur medical expenditures at age 54 and 25% incur medical expenditures at age 64 whereas 25% of non-smokers incur medical expenditures at age 54 and 75% incur medical expenditures at 64. Further, assume that when medical expenditures occur they equal $5,000 and that only those who do not incur medical expenditures at age 54 survive until age 64. Assume that half of all individuals smoke in each age cohort and that birthrates are steady over time (800 born each year).

Then the relative risk, r, of medical expenditures for smokers aged 54 equals 3 and the relative risk for smokers aged 64 equals 1 (in this simple example these are the only two ages we have to consider). In any given year, 400 individuals aged 54 incur $5,000 of medical expenditures (100 non-smokers and 300 smokers) for a total of $2,000,000 and 400 individuals aged 64 incur $5,000 of medical expenditures (300 non-smokers and 100 smokers) also for a total of $2,000,000. Thus, in total, the Insurance Funds pays out $4,000,000 per year in medical costs in this example.

The smoking attributable fraction, s, for those aged 54 would equal 0.5 while the smoking attributable fraction for those aged 64 would equal 0. Suppose the extreme, that had the defendants not engaged in their alleged wrongful conduct, nobody would have

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ever smoked and relative risks for both 54 and 64 year old individuals would (by definition) equal 1. Using the attributable risk mathematics, one would then calculate damages of .5 × $2,000,000 = $1,000,000 per year.

What would actually happen to the Insurance Funds' medical expenditures if nobody had ever smoked in this example? If nobody had smoked, then 25% of all individuals in any birth cohort would incur $5,000 of medical expenditures at age 54 and 75% would incur medical expenditures of $5,000 at age 64. In any given year, 200 individuals aged 54 and 600 individuals aged 64 would incur medical expenditures of $5,000 per individual. Thus, the Insurance Funds' total medical expenditures would still equal $4,000,000 per year. That is, each year the Insurance Funds' total medical expenditures would be exactly the same except that the average age of those incurring medical expenditures would increase from 56.5 to 61.5 years old. So, the Insurance Funds do not incur additional medical expenditures due to the defendants wrongful conduct.

To see why the attributable risks approach fails in this instance, it is helpful to examine how it calculates damages. In this simple example there are an equal number of smokers and non-smokers in each birth cohort. Now, 25% or 100 non-smokers in a given cohort incur medical expenditures at age 54. Since there are an equal number of smokers and non-smokers, we would then expect 25% or 100 smokers to incur medical expenditures at age 54 if the risk of medical expenditure for smokers were equal to that of non-smokers. However, 300 smokers incur medical expenditures at age 54. Thus, the attributable risk approach calculates damages of 200 × $5000 = $1,000,0000 per year. Essentially, the attributable risk approach assumes that these medical expenditures are

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avoidable. In fact, they are only delayed. These 200 "excess" smokers would have incurred $5,000 of medical expenditures at age 64 instead of age 54 had they not smoked. Thus, the $1,000,000 in "excess" medical expenditures of the Insurance Funds is delayed by 10 years; it is not avoided *forever*. Aggregating across all birth cohorts, however, results in no change in the Insurance Funds' total medical expenditures over time since the $1,000,000 in excess medical expenditures of 54 year old smokers are replaced by $1,000,000 in additional medical expenditures of 64 year old non-smokers for each calendar year.

An approach that examines medical costs over time avoids this mistake. Had the defendants not engaged in their alleged wrongful conduct and nobody had ever smoked, the counterfactual cost stream for smokers would incorporate a 25% chance of incurring $5,000 in medical expenditures at age 54 and a 75% chance of incurring $5,000 in medical expenditures at age 64. While the Insurance Funds delay payment of $5,000 for those smokers who would incur medical expenditures at age 64 had they not smoked, the Insurance Funds' aggregate medical payments actually remain the same per year since medical expenditures are summed across all birth cohorts at any point in time.

Another problem with Dr. Dement's and Mr. Roberts' damage calculation is that it implicitly assumes that had the defendants not engaged in their alleged wrongful conduct, nobody would have ever smoked. This assumption ignores the timing of the alleged wrongful conduct, the Insurance Funds' response, if any, and individual behavioral response, if any, to that conduct.

For example, suppose that the alleged wrongful conduct began in 1960, then

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medical expenditures associated with smoking that occurred before this time should not be included in the damage calculation. Dr. Dement and Mr. Roberts compare both current smokers and former smokers to non-smokers. But if an individual began smoking before 1960, then the proper comparison for these individuals, even if they would have quit in 1960 had the alleged wrongful conduct not occurred, is with a former smoker.

Using data from the American Cancer Society's Cancer Prevention Survey II (CPS II), Table 1 shows that 95.8% of men aged 35 to 64 (at the time of the CPS II interview) began smoking before 1960 and Table 2 shows that 99.7% of men aged 65 and older began smoking before 1960. For women, Table 3 shows that 88.9% of women aged 35 to 64 began smoking before 1960 and Table 4 shows that 97.9% of women aged 65 and over began smoking before 1960.

Similar results are found using data from the 1987 National Medical Expenditure Survey (NMES). Table 5 shows that 61.4% of men aged 35 to 64 (in 1987) began smoking before 1960 and Table 6 shows that 99.0% of men aged 65 and older began smoking before 1960. For women, Table 7 shows that 51.8% of women aged 35 to 64 began smoking before 1960 and Table 8 shows that 97.4% of women aged 65 and over began smoking before 1960.

The five insurance funds analyzed in detail by Dr. Dement and Mr. Roberts consist of janitors, maids, housemen, iron worker, electricians, power installers, auto mechanics and related trades and laborers.[1] When the NMES data is restricted to these

[1]Specifically, Dr. Dement assumes, for purposes of estimating smoking prevalence, that workers in these Funds have occupational codes 449, 453,505, 507, 514, 555, 575, 576, 577,

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workers, similar results are found. Table 9 shows that 65.1% of men employed in these occupations and aged 35 to 64 (in 1987) began smoking before 1960 and Table 10 shows that 97.4% of men in these occupations aged 65 and older began smoking before 1960. For women, Table 11 shows that 52.4% of women employed in these occupations and aged 35 to 64 began smoking before 1960 and Table 8 shows that 100.0% of women employed in these occupations and aged 65 and over began smoking before 1960.

Of course individual smokers who began smoking before 1960 may or may not have quit had the defendants not engaged in their alleged wrongful conduct. They could have cut back on their cigarette consumption, switched to a safer cigarette, or not changed their behavior at all. In this latter case, there would be no damages. Moreover, individuals who started smoking after 1960 may have still smoked had the defendants not engaged in their alleged misconduct. In calculating an estimate of damages due to the alleged wrongful conduct, one needs to estimate the behavioral changes of individual smokers had the alleged misconduct not occurred. Dr. Dement and Mr. Roberts fail to do this in their damage calculations.

Further, the Insurance Funds may or may not have acted differently had the defendants not engaged in their alleged misconduct. Of course, even if the Insurance Funds had acted differently, it may not have impacted individual behavior, and hence, the Insurance Funds' expenditures. To calculate separately the damages, if any, the Insurance Funds incurred because of the effect of the defendants' alleged misconduct on the Funds'

597, 869, 885, and 887.

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behavior, one must also estimate how the Insurance Funds' behavior would have changed, if at all, had the alleged misconduct not occurred and whether it would have had an effect on the smoking behavior of those individuals insured by the Insurance Funds.

In calculating the relative risks of medical expenditures between smokers and non-smokers, Dr. Dement and Mr. Roberts use mortality differences between current and former smokers and non-smokers. These mortality differences are derived from the American Cancer Society's Cancer Prevention Study II (CPS II). However, there is no reason to expect that the proportion of deaths attributable to smoking for a specific condition reflects the proportion of expenditures due to smoking for that same condition.

The CPS II data is not a representative sample of the U.S. population or a representative sample of construction workers and their spouses. For example, consider education levels in the CPS II. Table 13 shows that only 15.1% of those aged 35 and older in the CPS II report having less than a high school education while in a nationally representative sample such as the NMES, 28.1% of those aged 35 and older report having less than a high school education. Table 14 shows that 52.5% of those aged 35 and older in the CPS II report having spent at least some time in college education while only 38.8% of those aged 35 and older in the NMES have reported spending some time in college.

Table 13 shows that among men aged 35 to 64, only 12.1% in the CPS II report having less than a high school education while in the NMES among males aged 35 to 64 who are employed in occupations covered by the five Insurance Funds considered in detail by Dr. Dement and Mr. Roberts, 42.2% report having less than a high school

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education. Among men aged 65 and older in the CPS II, 29.0% report having less than a high school education, while in the NMES among males aged 65 and older who are (or were) employed in occupations covered by these five Insurance Funds, 64.5% report having less than a high school education.

Dr. Dement and Mr. Roberts do not attempt to adjust the relative risks of medical expenditures for such differences between the CPS II and these workers and their spouses. Specifically, Dr. Dement and Mr. Roberts do not attempt to control for possible confounding. While Dr. Dement claims a Battalle report finds little effect of confounding on the relative risk of mortality, using a limited number of potential confounders, an absence of confounding in the relative risk of mortality does not imply an absence of confounding in the relative risk of medical expenditures.

I have used the 1987 National Medical Expenditure Survey (NMES), which contains data on medical expenditures for smoking- related conditions, to analyze the effect of Dr. Dement and Mr. Roberts' reliance on mortality instead of expenditure data. When potential confounding is ignored using the NMES data, overall, the estimated SAF for smoking-related conditions is 20.3% (see Table 15). For males aged 35 to 64, the estimated SAF is 38.3% and for males aged 65 and older, the estimated SAF is 0.5%. For women aged 35 to 64, the estimated SAF is 13.4% while for women aged 65 and older, the estimated SAF is 8.9%.

Age-gender SAF's were also computed for each major occupational category. These age-gender SAF's were then used to derive SAF's for each major occupational category using weights similar to those used by Mr. Roberts (see Appendix M of Mr

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Roberts' October 8, 1998 report) which are reported in column (1) of Table 16. For example, the SAF for matched expenditures on smoking-related conditions of individuals in the Sales occupation equals 28.1%. This estimated SAF is not only considerably less than Mr. Roberts' point estimate of 39.0% for smoking-related conditions for the Sales occupation, but it is also less than his estimated lower bound of 29.7%.

I have also used matched expenditure data to estimate the SAF's for each of the five insurance funds considered explicitly by Dr. Dement and Mr. Roberts. As column (2) of Table 17 shows, the estimated SAF's are considerably lower than the "best" estimates reported in Mr. Roberts' report. Moreover, in many instances they are less than his estimated lower bound. For example, the estimated SAF for matched expenditures of Iron Workers Local 17 equals 23.9% which is less than the lower bound estimate of 29.9% contained in Mr. Roberts' report (see Appendix I-3 of Mr. Roberts' October 8, 1998 report).

Using data from the 1987 NMES, I have also analyzed the effect of Dr. Dement and Mr. Roberts' failure to control for confounding by adding controls for education, region of the country, central city, suburb or rural residence, race, age, body mass, union status, seat-belt use, and employment in construction, occupation, by adding education - smoking status and body mass - smoking status interaction variables, and by estimating separate models for each age-gender group.[2] Using the NMES, the estimated aggregate

[2]In the estimations, smoking status is controlled for using variables that indicate whether or not an individual is a former smoker or a current smoker. The four age gender groups are males 35-64, males 65 and older, females 35-64, and females 65 and older.

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SAF drops from 20.3% to 13.7% when controls for potential confounders are added (See column (2) of Table 15). For men aged 35 to 64, the SAF equals 18.5%, while for men 65 and older, the SAF equals 2.4%. For women aged 35 to 64, the estimated SAF equals 14.6% while for women 65 and older, the SAF equals 7.6%.

SAF's were also estimated for each major occupation category. These are presented in column (2) of Table 16. When confounders are controlled for, the estimated SAF drop considerably. For example, the SAF for matched expenditures for smoking related conditions for the Sales occupation drops from 28.1% to 18.9 when controls for confounders are added.

Column (2) of Table 17 presents SAF estimates for the matched Insurance Funds' expenditure data on smoking-related conditions as provided in Mr. Roberts' report. Controlling for confounders again reduces the estimated SAF's. For example, the SAF for the Iron Workers Local 17 Fund is reduced from 20.3% to 9.0%.

Table 15 through 17 also display SAF estimates for expenditures on smoking-related conditions when confounding is accounted for using the above-mentioned controls and when separate models are estimated by age, gender, and smoke status.[3] The estimated aggregate SAF in this case equals 4.6%. For men aged 35 to 64, the SAF equals 3.6%, while for men 65 and older, the SAF equals -13.7. For women aged 35 to 64, the estimated SAF equals 7.8% while for women 65 and older, the SAF equals 11.3%.

When these SAF's are then applied to the Insurance Funds' matched expenditure

[3]Since there are two age groups (35-64, 65+), two gender groups (Male, Female), and three smoking status' (Never, Former, Current) this entails estimating twelve separate models.

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data on smoking-related conditions as provided in Mr. Roberts' report, the SAF's for Insurance Funds' expenditures on smoking-related conditions are all negative except IBEW Local 38 which has an estimated SAF of 3.0%.

In sum, I have used the NMES to analyze the effect of Dr. Dement and Mr. Roberts' failure to rely on expenditure data and failure to control for potential confounders, I have found that Dr. Dement and Mr. Roberts over-estimate the smoking attributable expenditures for the Insurance Funds.

The report of October 12, 1998 by Dr. Harris considers the limitations of the mortality ratio approach. While Dr. Harris admits that the mortality ratio approach may either over-estimate or underestimate the corresponding spending ratios, he states that overall it is likely to be a conservative estimate since it ignores expenditures for conditions not contained in the 1989 Surgeons General Report. To support such a conclusion he calculates a smoking attributable fraction (SAF) for all medical expenditures of 9.1% which exceeds the overall SAF of 5.9 % based on the mortality ratio approach. This SAF is derived using the smoking prevalence data contained in Dement along with assumptions that the relative risk for medical expenditures of current smokers equals 1.23 and that the relative risk for medical expenditures of former smokers equals 1.07. Dr. Harris has used this flawed approach in the Massachusetts AG litigation in which I have also been retained as an expert for the defense. To state my opinions in this report concerning Dr. Harris' approach, I have attached my expert report for the Massachusetts AG case.

Dr. Lauer's report also comments on the conservativeness of the mortality ratio

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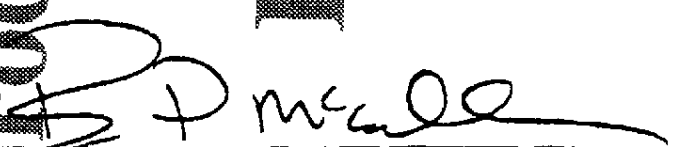
approach, at least for coronary heart disease. Dr. Lauer's report, however, presents no analysis of the differences over time between smokers (current and former) and non-smokers medical expenditures for coronary heart disease. Thus, it has little bearing on the issue of whether or not the mortality ratio approach as used by Dr. Dement and Mr. Roberts to estimate smoking attributable expenditures for smoking related diseases is a conservative estimate, even for coronary heart disease.

Moreover, in some instances Dr. Lauer's summaries of papers are misleading. For example, in the summary of the paper by van Brussel et al., Dr. Lauer fails to report that van Brussel et al. found no evidence that reported smoking status at the time of bypass surgery was statistically related to subsequent re-operation, acute myocardial infarction, coronary balloon angioplasty, or angina pectoris over the 15 year period following bypass surgery.

I am continuing with my analysis of the plaintiffs' expert reports and may supplement this report in the future.



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Brian P. McCall, Ph.D. Date

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Table 1
Year Started Smoking: Men 34-65
American Cancer Society's: Cancer Prevention Study II

Year Started Smoking	Percent	Cumulative Percent
Before 1920	0.0	0.0
1920-1929	0.5	0.5
1930-1939	19.2	19.7
1940-1949	50.7	70.4
1950-1959	25.4	95.8
1960-1969	3.6	99.4
1970 or After	0.6	100.0

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Table 2
Year Started Smoking: Men 65+
American Cancer Society's: Cancer Prevention Study II

Year Started Smoking	Percent	Cumulative Percent
Before 1920	5.9	5.9
1920-1929	38.8	44.7
1930-1939	48.0	92.7
1940-1949	6.2	98.9
1950-1959	0.8	99.7
1960-1969	0.2	99.9
1970 or After	0.1	100.0

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Table 3
Year Started Smoking: Women 34-65
American Cancer Society's: Cancer Prevention Study II

Year Started Smoking	Percent	Cumulative Percent
Before 1920	0.0	0.0
1920-1929	0.0	0.0
1930-1939	10.0	10.0
1940-1949	42.1	52.1
1950-1959	36.8	88.9
1960-1969	9.3	98.2
1970 or After	1.8	100.0

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Table 4
Year Started Smoking: Women 65+
American Cancer Society's: Cancer Prevention Study II

Year Started Smoking	Percent	Cumulative Percent
Before 1920	1.0	1.0
1920-1929	21.5	22.5
1930-1939	55.5	78.0
1940-1949	14.9	92.9
1950-1959	5.0	97.9
1960-1969	1.6	99.5
1970 or After	0.5	100.0

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Table 5
Year Started Smoking: Men 34-65
1987 National Medical Expenditure Survey

Year Started Smoking	Percent	Cumulative Percent
Before 1920	0.0	0.0
1920-1929	0.1	0.1
1930-1939	3.6	3.7
1940-1949	25.1	28.8
1950-1959	32.6	61.4
1960-1969	33.1	94.4
1970-1979	5.2	99.6
1980 or After	0.4	100.0

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Table 6
Year Started Smoking: Men 65+
1987 National Medical Expenditure Survey

Year Started Smoking	Percent	Cumulative Percent
Before 1920	4.6	4.6
1920-1929	24.6	29.3
1930-1939	54.3	83.6
1940-1949	14.4	98.0
1950-1959	1.0	99.0
1960-1969	0.8	99.9
1970-1979	0.1	100.0
1980 or After	0.0	100.0

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Table 7
Year Started Smoking: Women 34-65
1987 National Medical Expenditure Survey

Year Started Smoking	Percent	Cumulative Percent
Before 1920	0.0	0.0
1920-1929	0.0	0.0
1930-1939	1.1	1.1
1940-1949	20.0	21.1
1950-1959	30.7	51.8
1960-1969	37.5	89.3
1970-1979	9.8	99.1
1980 or After	0.9	100.0

Table 8
Year Started Smoking: Women 65+
1987 National Medical Expenditure Survey

Year Started Smoking	Percent	Cumulative Percent
Before 1920	0.8	0.8
1920-1929	14.6	15.4
1930-1939	48.3	63.8
1940-1949	25.4	89.2
1950-1959	8.3	97.4
1960-1969	1.8	99.2
1970-1979	0.5	99.7
1980 or After	0.3	100.0

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Table 9
Year Started Smoking: Male 34-65
Five Ohio Fund Occupations
1987 National Medical Expenditure Survey

Year Started Smoking	Percent	Cumulative Percent
Before 1920	0.0	0.0
1920-1929	0.0	0.0
1930-1939	4.6	4.6
1940-1949	24.4	29.0
1950-1959	36.1	65.1
1960-1969	31.4	96.4
1970-1979	3.6	100.0
1980 or After	0.0	100.0

Table 10
Year Started Smoking: Male 65+
Five Ohio Fund Occupations
1987 National Medical Expenditure Survey

Year Started Smoking	Percent	Cumulative Percent
Before 1920	3.9	3.9
1920-1929	23.9	27.8
1930-1939	59.8	87.6
1940-1949	9.8	97.4
1950-1959	0.0	97.4
1960-1969	2.6	100.0
1970-1979	0.9	100.0
1980 or After	0.0	100.0

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Table 11
Year Started Smoking: Female 34-65
Five Ohio Fund Occupations
1987 National Medical Expenditure Survey

Year Started Smoking	Percent	Cumulative Percent
Before 1920	0.0	0.0
1920-1929	0.0	0.0
1930-1939	0.4	0.4
1940-1949	20.3	20.7
1950-1959	31.7	52.4
1960-1969	35.7	88.1
1970-1979	11.6	99.7
1980 or After	0.3	100.0

Table 12
Year Started Smoking: Female 65+
Five Ohio Fund Occupations
1987 National Medical Expenditure Survey

Year Started Smoking	Percent	Cumulative Percent
Before 1920	3.9	3.9
1920-1929	23.9	27.8
1930-1939	59.8	87.6
1940-1949	9.8	97.4
1950-1959	2.6	100.0
1960-1969	0.0	100.0
1970-1979	0.9	100.0
1980 or After	0.0	100.0

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Table 13
Percentage of High School Dropouts

Group	1985 CPS II	1987 NMES
All Individuals: 35+	15.1%	28.1%
Men: 35- 64	12.1%	22.1%
Men: 65 +	29.0%	46.6%
Women: 35 - 64	9.8%	21.5%
Women: 65 +	27.7%	47.3%
Five Ohio Funds' Occupations: 35+	-	51.6%
Five Ohio Funds' Occupations: Male 35-64	-	42.2%
Five Ohio Funds' Occupations: Male 65+	-	64.5%
Five Ohio Funds' Occupations: Female 35-64	-	53.5%
Five Ohio Funds' Occupations: Female 65+	-	78.6%

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Table 14
Percentage Reporting Some College

Group	1985 CPS II	1987 NMES
All Individuals: 35+	52.5%	35.9%
Men: 35- 64	60.9%	44.9%
Men: 65 +	44.8%	23.6%
Women: 35 - 64	51.8%	36.5%
Women: 65 +	41.2%	20.6%
Five Ohio Funds' Occupations: 35+	-	10.9%
Five Ohio Funds' Occupations: Male 35-64	-	14.5%
Five Ohio Funds' Occupations: Male 65+	-	6.6%
Five Ohio Funds' Occupations: Female 35-64	-	9.2%
Five Ohio Funds' Occupations: Male 65+	-	1.9%

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Table 15
Estimated Smoking Attributable Fractions for NMES Expenditures on Smoking-Related Conditions*

Group	No Controls (1)	Control Set #1** (2)	Control Set #2*** (3)
All Individuals: 35+	20.3% (-2.1%,30.4%)	13.7% (-0.5%, 20.9%)	4.6% (-71.2%,13.1%)
Men: 35- 64	38.3% (-7.8%,58.3%)	18.5% (-13.4%, 36.9%)	3.6% (-175.7%,36.6%)
Men: 65 +	0.5% (-77.8%,37.3%)	2.4% (-25.2%,21.1%)	-13.7% (-207.2%,24.1%)
Women: 35- 64	13.4% (-14.1%,30.3%)	14.6% (2.9%, 22.4%)	7.8% (-41.3%,23.7%)
Women: 65 +	8.9% (-20.5%,21.3%)	7.6% (-5.9%,12.9%)	11.3% (-48.7%,18.5%)

* Bootstrapped 95 % confidence intervals based on 1000 replications are presented in parentheses

** Models estimated separately by age and gender. In each model, controls are added for education, region of the country, central city, suburb or rural residence, race, age, body mass, union status, seat belt use, employment in construction, occupation (blue-collar, white-collar, missing), former smoker, and current smoker as well as interactions of smoking status and education and smoking status and body mass.

*** Models estimated separately by age, smoking status and gender. In each model, controls are added for education, region of the country, central city, suburb or rural residence, race, age, body mass, union status, seat belt use, employment in construction, and occupation (blue-collar, white-collar, missing).

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Table 16
Estimated Smoking Attributable Fractions for Occupation Categories*

Occupation	No Controls (1)	Control Set #1** (2)	Control Set #2*** (3)
Professional Specialty	24.4% (0.4%,34.7%)	18.3% (5.5%, 25.5%)	8.3% (-61.2%,24.4%)
Sales	28.1% (-3.1%,41.3%)	18.9% (2.5%, 28.7%)	7.4% (-97.8%,29.0%)
Administrative Support/ Clerical	28.1% (-2.7%,40.7%)	18.3% (2.3%,28.2%)	6.7% (-97.2%,28.6%)
Service	27.7% (-10.1%,43.0%)	12.8% (-17.5%,28.6%)	-2.5% (-164.3%,22.8%)
Precision Production, Craft & Repair	28.9% (-4.2%,42.7%)	15.9% (-8.6%,28.6%)	6.3% (-153.0%,25.7%)
Machine Operators, Assemblers & Inspectors	28.6% (-7.5%,43.2%)	12.2% (-17.7%, 27.6%)	-1.6% (-167.4%,23.5%)
Transportation & Materials Moving	28.2% (-8.8%,43.4%)	16.8% (-8.8%,29.4%)	3.5% (-151.2%,25.8%)
Handlers, Equipment Cleaners, Helpers & Laborers	25.7% (-9.1%,40.3%)	5.1% (-52.7%,25.6%)	-11.3% (-341.0%,20.8%)

* Bootstrapped 95 % confidence intervals based on 1000 replications are presented in parentheses

** Models estimated separately by age and gender. In each model, controls are added for education, region of the country, central city, suburb or rural residence, race, age, body mass, union status, seat belt use, employment in construction, occupation (blue-collar, white-collar, missing), former smoker, and current smoker as well as interactions of smoking status and education and smoking status and body mass.

*** Models estimated separately by age, smoking status and gender. In each model, controls are added for education, region of the country, central city, suburb or rural residence, race, age, body mass, union status, seat belt use, employment in construction, and occupation (blue-collar, white-collar, missing).

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Table 17
Estimated Smoking Attributable Fractions for Insurance Funds *

Fund	No Controls (1)	Control Set #1** (2)	Control Set #2*** (3)
Iron Workers Local 17	23.9% (-9.6%,40.3%)	9.0% (-30.2%, 26.2%)	-10.6% (-703.5%,26.3%)
IBEW Local 38	30.7% (-2.7%,46.5%)	20.7% (1.4%, 32.1%)	3.0% (-174.5%,28.4%)
Dealers - Unions	26.4% (-4.1%,40.0%)	12.6% (-17.3%,25.8%)	-0.3% (-133.3%,23.6%)
Service Employees	17.5% (-11.0%,31.4%)	9.8% (-15.0%, 21.4%)	-13.8% (-164.2%,8.6%)
Ship Laborers	30.0% (-9.9%,48.3%)	4.0% (-60.3%,29.4%)	-15.6% (-612.6%,39.8%)

* Bootstrapped 95 % confidence intervals based on 1000 replications are presented in parentheses

** Models estimated separately by age and gender. In each model, controls are added for education, region of the country, central city, suburb or rural residence, race, age, body mass, union status, seat belt use, employment in construction, occupation (blue-collar, white-collar, missing), former smoker, and current smoker as well as interactions of smoking status and education and smoking status and body mass.

*** Models estimated separately by age, smoking status and gender. In each model, controls are added for education, region of the country, central city, suburb or rural residence, race, age, body mass, union status, seat belt use, employment in construction, and occupation (blue-collar, white-collar, missing).

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Health-Care Spending Attributable to Cigarette Smoking: State of Massachusetts Medicaid Program, 1991-1998

State of Massachusetts v. Phillip Morris et al.

Expert report of Brian P. McCall, Ph.D.

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McCall Exhibit 3
Date 1-29-99
Judy A. Steinke
Shorthand Reporter

Smoking Attributable Health Care Costs: Iron Workers Local No. 17 Insurance Fund et al. v. Phillip Morris, Inc. et al.

Supplemental Expert report of Brian P. McCall, Ph.D.

November 18, 1998

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I was retained by the counsel for the defendants to review plaintiffs' experts' estimates of the Iron Workers Local No. 17 Insurance Fund et al. (referred to subsequently as the "Insurance Funds") health-care spending attributable to alleged misconduct in the Iron Workers Local No. 17 Insurance Fund et al. v. Phillip Morris, Inc. et al. case. The methods I use are commonly employed in economics and statistics and reflect my training and experience in those fields.

I have reviewed the supplemental reports by prepared by Dr. Jeffery Harris (October 22, 1998 & November 6, 1998) & Dr. Michael Lauer (October 22, 1998). The methods and assumptions employed by Dr. Harris to calculate conduct-related damages are inappropriate and result in invalid estimates of the damages incurred by the plaintiffs as a result of the alleged wrongful conduct of the defendants. Dr Lauer's supplemental report dealing with smoking and strokes offers no compelling evidence that supports the notion that the estimates of Dr. Dement and Mr. Roberts are, in fact, "conservative".

Dr. Harris' conduct-related damage amounts are simply fractions of Dr. Dement and Mr. Roberts' smoking attributable expenditure amounts. As discussed in my November 6, 1998 report in this case, Dr. Dement and Mr. Roberts over-estimate smoking attributable expenditures. Thus, even if Dr. Harris' method of converting smoking attributable expenditures into conduct-related damages were correct, he will over-estimate conduct-related damages.

For example, Dr. Harris, relying on the "low" SAF estimate presented by Dr. Dement and Mr. Roberts, concludes that the low estimate of conduct-related damages for

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Iron Workers Local 17 is $3,356,937. If, instead, Dr. Harris' methodology were applied to the SAF that I estimated for Iron Workers Local 17 and presented in column 2 of Table 17 of my November 6 report, conduct-related damages would be only $664,804, a decline of more than 80%.[1]

Moreover, Dr. Harris' computation of conduct-related damages is not sound, even if the SAF upon which it were based were correct. Dr. Harris nowhere attempts to estimate using standard statistical methods the effect of the defendants' alleged misconduct on smoking prevalence or the relative risks of smoking in a counterfactual world. Instead, he makes a series of subjective judgments based on assumptions, without evaluating the validity of those assumptions or the effect of varying those assumptions on the final, conduct-related damage estimates. For example:

1. Dr. Harris assumes that, in a world without defendants' alleged misconduct, the proportion of former smokers among ever smokers would have increased at a rate between 180% to 410% greater than it actually did and that this increase in the growth of "q" would have been sustained from the mid - 1950's through 2007. This estimate, however, is not based on any empirical analyses of changes in "q" in the real world either in the United States during the time periods in which Dr. Harris asserts there was more

[1] In Table 17 of my November 6, 1998 report, I presented SAF estimates for expenditures for smoking-related-diseases for the plaintiff union insurance funds. Those SAF estimates were made by using regression analysis on data from the NMES on individuals 35 and older, as described on page 12 of my prior report. Since expenditures for smoking attributable diseases of those 35 and older accounts for approximately 10.5% of total healthcare expenditures for that group, the SAF for total medical expenditures is 0.95% compared to the low, best and high SAF's estimated by Dr. Dement and Mr. Roberts of 4.77%, 6.97%, and 8.44%, respectively.

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information about the health-risks of smoking or from elsewhere around the world in countries whose experience was unaffected by the alleged conspiracy among the defendant tobacco companies in this country.

2. Dr. Harris assumes that "safer" cigarettes would have been made available that would have increased the rate of decline in the relative risks of medical expenditures for current smokers by as much as 640% and that this increase in the rate of decline would have been sustained for nearly half a century. Dr. Harris arrives at this estimate by comparing the R&D expenditures in the tobacco industry to that of the pharmaceutical industry and by asserting a one-to one correspondence between increases in R&D expenditures, the introduction of new products, and the decline in his value of "r" for current smokers. Here again, Dr. Harris offers no analysis of changes in the rates of "r" here in the United States during periods when there was increased R&D expenditures or from elsewhere around the world in countries whose experience was unaffected by the alleged conspiracy in this country. Indeed, he has acknowledged that there is no "safer" cigarette marketed elsewhere around the world that has not been made available to consumers in this country and that he cannot identify the design features that the "safer" cigarettes would need to incorporate to achieve his postulated decline in "r" for current smokers.[2]

3. Dr. Harris further assumes that peak ever smoking prevalence would have occurred in 1955, 1960 or 1965 in his counterfactual world without any justification or

[2]See pages 176-177 and 322-325 of Dr. Harris' deposition in State of Arizona v. American Tobacco Company et al.

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support.

These assumptions are not innocuous. If, for instance, both the smoking prevalence and the ratio of current to former smokers remained unchanged in the counterfactual world but the relative risks of medical expenditures for current smokers declined at twice the rate it actually did, then conduct-related damages would be a substantially smaller fraction of smoking attributable expenditures than Harris' low estimate. For example, using the 0.95% SAF for Iron Workers Local 17 which is implied by the estimates in column 2 of Table 17 of my November 6, 1998 report, conduct-related damages would equal $302,216, which a) is less than half of the estimate of conduct-related damages implied by the 0.95% SAF estimate but retaining all of Dr. Harris' assumptions, and b) is over 90% less than Dr. Harris' low estimate of conduct-related damages which is based upon the SAF estimates of Dr. Dement and Mr. Roberts.

Alternatively, if both smoking prevalence and the ratio of current to former smokers remained unchanged in the counterfactual world but the relative risks of medical expenditures for current smokers declined at 150% the rate it actually did, then conduct-related damages would equal $161,719.

Dr. Lauer's supplemental report comments on the conservativeness of the mortality ratio approach for stroke. Dr. Lauer's report, however, presents no analysis of the differences over time between smokers (current and former) and non-smokers medical expenditures for stroke. Thus, it has little bearing on the issue of whether or not the mortality ratio approach as used by Dr. Dement and Mr. Roberts to estimate smoking attributable expenditures for smoking related diseases is a conservative estimate, even for

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strokes. Moreover, it is unclear whether the limited evidence presented by Dr. Lauer for stroke incidence supports the notion that the relative risk of death by stroke for smokers is a conservative estimate of the relative risk of stroke incidence.

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B. P. McCall 11-18-98

Brian P. McCall, Ph.D. Date

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Table 1
Estimated Proportion of Total Smoking- Attributable Expenditures
Caused by Alleged Misconduct: Harris Method

Year	Dr. Harris' Low Estimate	Smoking Prevalence Remains Constant - Rate of Decline of Relative Risk (r) Increases by	
		50%	25%
1972	32.1%	11.6%	6.0%
1973	34.3%	12.2%	6.3%
1974	36.4%	12.8%	6.6%
1975	38.5%	13.3%	6.9%
1976	39.3%	13.9%	7.2%
1977	40.1%	14.4%	7.5%
1978	40.8%	15.0%	7.8%
1979	41.6%	15.5%	8.1%
1980	42.4%	16.1%	8.4%
1981	43.1%	16.6%	8.7%
1982	43.8%	17.2%	9.0%
1983	44.6%	17.7%	9.3%
1984	45.3%	18.2%	9.6%
1985	46.0%	18.8%	9.9%
1986	46.7%	19.3%	10.2%
1987	47.4%	19.8%	10.5%
1988	48.1%	20.3%	10.8%
1989	48.7%	20.9%	11.0%
1990	49.4%	21.4%	11.3%
1991	50.0%	21.9%	11.6%
1992	50.7%	22.4%	11.9%
1993	51.3%	22.9%	12.2%
1994	52.0%	23.4%	12.5%
1995	52.6%	23.9%	12.8%
1996	53.2%	24.4%	13.0%
1997	53.8%	24.9%	13.3%
1998	54.4%	25.4%	13.6%
1999	55.0%	25.8%	13.9%
2000	55.6%	26.3%	14.2%
2001	56.1%	26.8%	14.4%
2002	56.7%	27.3%	14.7%
2003	57.3%	27.7%	15.0%
2004	57.8%	28.2%	15.3%
2005	58.4%	28.7%	15.5%
2006	58.9%	29.1%	15.8%
2007	59.4%	29.6%	16.1%

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McCall Exhibit 4
Date 1-29-99
Judy A. Steinke
Shorthand Reporter

Smoking Attributable Health Care Costs: Iron Workers Local No. 17 Insurance Fund et al. v. Phillip Morris, Inc. et al.

Supplemental Expert report of Brian P. McCall, Ph.D.

January 22, 1999

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I was retained by the counsel for the defendants to review plaintiffs' experts' estimates of the Iron Workers Local No. 17 Insurance Fund et al. (referred to subsequently as the "Insurance Funds") health-care spending attributable to alleged misconduct in the Iron Workers Local No. 17 Insurance Fund et al. v. Phillip Morris, Inc. et al. case. The methods I use are commonly employed in economics and statistics and reflect my training and experience in those fields.

I have reviewed the supplemental reports prepared by Dr. Jeffery Harris (December 3, 1998 & December 20, 1998). This report contains my opinions concerning these supplemental reports of Dr. Harris as well as sensitivity analyses of the calculations contained in my earlier reports.

In my November 6, 1998 report for this case, I commented that an attributable risk (prevalence-based) approach is an incorrect approach for analyzing the costs of smoking, and, hence damages in this case. Instead, a lifetime (incidence-based) approach that looks at costs over time should be employed. The 1992 Report of the Surgeon General, "Smoking and Health in the America's (U.S. Department of Health and Human Services) states "The incidence-based approach is better suited than the prevalence-based approach for estimating the costs of smoking... " (pg. 112).

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I have reviewed nine lifetime studies of the medical costs of smoking.[1] For all nine of these studies, it is possible to calculate the relative risk of lifetime medical expenditures for male smokers and for seven of these studies, it is possible to calculate the relative risk of lifetime medical expenditures for female smokers. The median relative risk of lifetime medical expenditures for male smokers is .999 and the median relative risk for lifetime medical expenditures of female smokers is 1.000. In Dr. Harris' summary of a limited number of prevalence-based studies, the medical costs of smoking he calculated a median value of 1.15 for the relative risk of the medical costs of smoking. Thus, lifetime or incidence-based estimates of the relative risk of the medical costs of smoking are substantially lower.

As mentioned in my November 6, 1998 report, Dr. Dement and Mr. Roberts employ a mortality ratio approach using data from the American Cancer Society's Cancer Prevention Study II. As I stated in my earlier report, this study is not representative of the type of workers insured by the Insurance Funds which insure primarily blue-collar

[1] See Barendregt J., L. Bonneux, & P. Van Der Maas (1997), "The Health Care Costs of Smoking," The New England Journal of Medicine, 15, 1052-1057, Hodgson, T. (1992), "Cigarette Smoking and Lifetime Medical Expenditures," Millbank Quarterly, 70, 82-125, Leu, R. & T. Schaub (1983), "Does Smoking Increase Medical Expenditure," Soc. Sci. Med., 17, 1907-1914, Leu, R. & T. Schaub (1984), "Economic Aspects of Smoking," Effective Health Care, 2, 111-121, Leu, R. & T. Schaub (1985), "More on the Impact of Smoking on Medical Care Expenditures," Soc. Sci. Med., 21, 825-827, Lippiatt, B. (1990), "Measuring Medical Cost and Life Expectancy Impacts of Changes in Cigarette Sales," Preventive Medicine, 19, 515-532, Manning, W., E. Keeler, J. Newhouse, E. Sloss, & J. Wasserman (1991), The Costs of Poor Health Habits, Harvard University Press, Raynauld, A. & J. Vidal (1992) "Smokers' Burden on Society: Myth and Reality in Canada," Canadian Public Policy, 18, 300-317, Viscusi, W. K. (1994) "Cigarette Taxation and the Social Consequences of Smoking," in Tax Policy and the Economy, J. Poterba ed.: MIT Press, Weinkam, J., W. Rosenbaum, & T. Sterling (1987), "Smoking and Hospital Utilization," Soc. Sci. Med., 24, 983-986.

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workers. For example, blue-collar workers differ from white-collar workers along many dimensions which can impact medical expenditures. Blue-collar workers are more likely to be problem drinkers[2]; more likely to suffer from heart disease even when factors usually associated with coronary heart disease (CHD) are accounted for[3]; more likely to have multiple risk factors[4]; less likely to be knowledgeable about CHD risk factors[5]; less likely to adopt preventive health practices[6]; less likely to participate in work-site health

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[2]See for example Blazer, L., and Mansfield, P. (1995), "A Comparison of Substance Use Rates Among Female Nurses, Clerical Workers, and Blue-Collar Workers," Addictions Nursing, 7, 75-83. Hartford, T., et al. (1992), "Alcohol Use and Dependence among Employed Men and Women in the United States", Alcohol Clinical and Experimental Research, 16, 146-148, Lynch, J., et al. (1997), "Why do Poor People Behave Poorly? Variation in adult Health Behaviors and Psychosocial Characteristics by Stages of the Socioeconomic Lifecourse," Social Science & Medicine, 44, 809-819. Parker, D., et al. (1983) "Alcohol Problems among employed Men in Metropolitan Detroit," Journal of Studies on Alcohol, 44, 1026-1039

[3]See, for example, Buring, J., et al. (1987), "Occupation and Risk of Death from Coronary Heart Disease," Journal of the American Medical Association, 258, 791-792, Lynch, J., et al. (1995), "Socioeconomic Status and Carotid Atherosclerosis," Circulation, 92,1786-1792, Siegrist, J., et al. (1990), "Low Status Control, High effort at Work and Ischemic Heart Disease: Prospective Evidence from Blue-Collar Men," Social Science & Medicine, 31, 1127-1134.

[4]See Emmons, K., et al. (1994), "Mechanisms in Multiple Risk Factor Interventions: Smoking, Physical Activity, and Dietary Fat Intake among Manufacturing Workers," Preventive Medicine, 23, 481-489.

[5]See Nourjah, P., et al. (1994), "Knowledge of Risk factors and Risk Behaviors Related to Coronary Heart Disease Among Blue and White Collar Males," Journal of Public Health Policy, 443-459.

[6]See Niknian, M., et al. (1991), Journal of Occupational Medicine, 33, 29-36.

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promotion programs.[7] Moreover, blue-collar workers who smoke appear to be more likely to work with hazardous material at the work-site than blue-collar workers who don't smoke.[8] There is also evidence that spouses of blue-collar men have higher rates of circulatory and hypertensive problems and that these differences are not due to differences in smoking behavior or income.[9]

Table 1 of this report presents a "corrected" Table 12 from my November 6, 1998 report. While the numbers change slightly, my conclusions are unchanged.

The estimates presented in Tables 15 through 17 of my November 6, 1998 report made no attempt to account for the insurance status of the respondents. To check the sensitivity of my estimates with respect to this variable, Tables 2 through 4 present smoking attributable fraction estimates for medical expenditures on smoking-related conditions which are based on model estimates that control for insurance status. Moreover, the average smoking attributable fractions reported in Tables 2 through 4 are based only on those who report having private insurance. As can be seen from the Tables

[7]See, for example, Alexy, B. (1990), "Workplace Health Promotion and the Blue Collar Worker," AAOHN Journal, 38, 12-16, Gebhardt, D., and Crump, C. (1990), "Employee Fitness and Wellness Programs in the Workplace," American Psychologist, 45, 262-272, Glaskow, R., et al. (1993), "Participation in Worksite Health Promotion: A Critique of the Literature and Recommendations for Future Practice," Health Education Quarterly, 20, 391-408. Stunkard, A., et al. (1989), "Weight loss Competitions at the Worksite: How they Work and How Well," Preventive Medicine, 18, 460-474.

[8]See Sorensen, G., et al. (1996), "Double Jeopardy: Workplace Hazards and Behavioral Risks for Craftpersons and Laborers," American Journal of Health Promotion, 10, 355-363.

[9]See Sterling, T., et al. (1983), "Prevalence of Disease in Wives of Blue Collar Workers: A Comparative Study," in Methods and Issues in Occupational and Environmental Epidemiology, Chiazze, L. , Lunden, F., and Watkins, D., eds. (Ann Arbor Science: MI).

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2 through 4, the smoking attributable fraction estimates for medical expenditures on smoking-related conditions are similar to those contained in my November 6, 1998 report.

In his December 3, 1998 supplemental report Dr. Harris finds that Dr. Dement and Mr. Roberts' "disease specific" estimate of smoking attributable expenses is over 30% larger than his aggregate estimate for the Ohio Laborer Fund. Dr. Harris argues in his December 3, 1998 supplemental report that underestimation of smoking prevalence may account for the difference. Underestimation of smoking prevalence, however, cannot account for such large differences. For example, only 2.4 percent of the 30 percent difference (i.e., 8 percent of the difference) between the Dement/Robert disease-specific estimate for the Ohio Laborers' fund and Dr. Harris' estimate for that fund is accounted for if the true smoking prevalence were 20 percent larger than the prevalence estimates made by Dr. Dement. In fact, only 10.8 percent of the 30 percent difference (i.e., 36 percent of the difference) between the Dement/Roberts disease-specific estimate for the Ohio Laborers' fund and Dr. Harris' aggregate estimate for that fund is accounted for even if the true smoking prevalence were 100 percent (i.e., if everybody smoked.)

The computer programs that generate the results provided in this supplemental report are found in the accompanying electronic materials, a copy of which I have sent to counsel for plaintiffs by overnight for Saturday delivery.

Finally, I may further supplement this report with sensitivity analyses using the NMES dataset with multiply-imputed values of missing expenditure information, to comment upon the twelve computer files of electronic materials prepared

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by Dr. Harris that I received only yesterday, and, possibly, to analyze as yet unproduced analyses of plaintiffs' rebuttal experts, Drs. Flanders and Burns.

B. P. McCall 1-22-99

Brian P. McCall, Ph.D. Date

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Table 1

Year Started Smoking: Female 65+

Five Ohio Fund Occupations

1987 National Medical Expenditure Survey

Year Started Smoking	Percent	Cumulative Percent
Before 1920	0.0	0.0
1920-1929	12.5	12.5
1930-1939	63.5	76.0
1940-1949	15.2	91.2
1950-1959	8.8	100.0
1960-1969	0.0	100.0
1970-1979	0.0	100.0
1980 or After	0.0	100.0

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Table 2
Estimated Smoking Attributable Fractions for NMES Expenditures on Smoking-Related Conditions*

Group	Control Set #3** (1)	Control Set #4*** (2)
All Individuals: 35+	13.5% (1.3%, 20.3%)	1.5% (-70.%,11.8%)
Men: 35- 64	19.1% (-7.0%, 35.9%)	4.8% (-152.3%,39.5%)
Men: 65 +	3.6% (-20.9%,22.3%)	-18.8% (-186.5%,25.9%)
Women: 35 - 64	13.2% (1.0%, 21.2%)	0.2% (-57.2%,17.6%)
Women: 65 +	7.3% (-8.2%,13.2%)	11.4% (-53.5%,18.3%)

* Bootstrapped 95 % confidence intervals based on 1000 replications are presented in parentheses

** Models estimated separately by age and gender. In each model, controls are added for education, region of the country, central city, suburb or rural residence, race, age, body mass, union status, seat belt use, employment in construction, occupation (blue-collar, white-collar, missing), private insurance, former smoker, and current smoker as well as interactions of smoking status and education and smoking status and body mass.

*** Models estimated separately by age, smoking status and gender. In each model, controls are added for education, region of the country, central city, suburb or rural residence, race, age, body mass, union status, seat belt use, employment in construction, occupation (blue-collar, white-collar, missing), and private insurance.

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Table 3
Estimated Smoking Attributable Fractions for Occupation Categories*

Occupation	Control Set #3** (1)	Control Set #4*** (2)
Professional Specialty	17.3% (4.3%, 24.7%)	4.8% (-68.1%,21.8%)
Sales	18.4% (3.2%, 27.7%)	3.6% (-100.8%,26.9%)
Administrative Support/ Clerical	17.3% (1.8%,27.2%)	1.9% (-110.5%,26.0%)
Service	14.1% (-9.2%,28.2%)	-1.1% (-125.2%,22.3%)
Precision Production, Craft & Repair	14.9% (-8.2%,27.4%)	3.7% (-138.1%,23.7%)
Machine Operators, Assemblers & Inspectors	11.9% (-15.2%, 26.7%)	-2.5% (-142.6%,22.5%)
Transportation & Materials Moving	15.2% (-11.9%,28.0%)	-1.5% (-154.1%,21.9%)
Handlers, Equipment Cleaners, Helpers & Laborers	7.1% (-33.8%,24.3%)	-12.1% (-272.5%,18.5%)

* Bootstrapped 95 % confidence intervals based on 1000 replications are presented in parentheses

** Models estimated separately by age and gender. In each model, controls are added for education, region of the country, central city, suburb or rural residence, race, age, body mass, union status, seat belt use, employment in construction, occupation (blue-collar, white-collar, missing), private insurance, former smoker, and current smoker as well as interactions of smoking status and education and smoking status and body mass.

*** Models estimated separately by age, smoking status and gender. In each model, controls are added for education, region of the country, central city, suburb or rural residence, race, age, body mass, union status, seat belt use, employment in construction, occupation (blue-collar, white-collar, missing), and private insurance.

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Table 4
Estimated Smoking Attributable Fractions for Insurance Funds*

Fund	Control Set #3** (1)	Control Set #4*** (2)
Iron Workers Local 17	8.5% (-26.9%, 25.2%)	-10.6% (-703.5%,26.3%)
IBEW Local 38	21.1% (3.4%, 32.4%)	-0.0% (-604.3%,28.7%)
Dealers - Unions	9.9% (-29.5%,25.4%)	-7.4% (-211.3%,22.2%)
Service Employees	9.6% (-10.7%, 20.8%)	-13.8% (-164.2%,8.6%)
Ohio Laborers	9.8% (-29.1%,31.3%)	-21.9% (-613.1%,38.9%)

* Bootstrapped 95 % confidence intervals based on 1000 replications are presented in parentheses

** Models estimated separately by age and gender. In each model, controls are added for education, region of the country, central city, suburb or rural residence, race, age, body mass, union status, seat belt use, employment in construction, occupation (blue-collar, white-collar, missing), private insurance, former smoker, and current smoker as well as interactions of smoking status and education and smoking status and body mass.

*** Models estimated separately by age, smoking status and gender. In each model, controls are added for education, region of the country, central city, suburb or rural residence, race, age, body mass, union status, seat belt use, employment in construction, occupation (blue-collar, white-collar, missing), and private insurance.

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McCall Exhibit 5
Date 1-29-99
Judy A. Steinke
Shorthand Reporter

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DEPOSITION EXHIBIT

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DEPONENT: Brian P. McCall

CASE NAME: Ohio Iron Worker

EXHIBIT NO: 6-8

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Table 4
Estimated Smoking Attributable Fractions for Insurance Funds *

Fund	Control Set #3** (1)	Control Set #4*** (2)
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Service Employers	9.6% (-10.7%, 20.8%)	-13.8% (-164.2%,8.6%)
Ohio Laborers	9.8% (-29.1%,31.3%)	-21.9% (-613.1%,38.9%)

* Bootstrapped 95 % confidence intervals based on 1000 replications are presented in parentheses.

** Models estimated separately by age and gender. In each model, controls are added for education, region of the country, central city, suburb or rural residence, race, age, body mass, union status, seat belt use, employment in construction, occupation (blue-collar, white-collar, missing), private insurance, former smoker, and current smoker as well as interactions of smoking status and education and smoking status and body mass.

*** Models estimated separately by age, smoking status and gender. In each model, controls are added for education, region of the country, central city, suburb or rural residence, race, age, body mass, union status, seat belt use, employment in construction, occupation (blue-collar, white-collar, missing), and private insurance.

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McCall Exhibit 9
Date 1-29-96
Judy A. Steinke
Shorthand Reporter

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DEPOSITION EXHIBIT

NOT RECEIVED

DEPONENT: Brian P. McCall

CASE NAME: Ohio Iron Worker

EXHIBIT NO: 10

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